



A-E Guide

for Architectural-Engineering Firms Performing Services for:
NAVFAC Washington

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Foreword

This guide contains policy information and requirements for the preparation of project specifications, project drawings, cost estimates and other related documents. Architects and engineers, who provide services under contract to the Commanding Officer, Naval Facilities Engineering Command Washington, for the investigation, design, construction, alteration or demolition of facilities, must follow these procedures.

Use of this guide will facilitate and expedite the preparation and review of project specifications, project drawings and cost estimates.

It is the intent of the Commander, Naval Facilities Engineering Command, to obtain quality facilities at a reasonable cost. Firms are encouraged to suggest improvements to this guide or advise the Commanding Officer of errors or conflicts in this guide. Please send suggested improvements and corrections to:

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NAVFAC Transformation

Beginning July 2004, the Naval Facilities Engineering Command (NAVFAC) began a major transformation to reshape its global engineering, acquisition, and public works organizations to enhance efficiency and effectiveness, and improve its products and services for the Navy, Marine Corps, Department of Defense, and other federal Clients.

This monumental change for NAVFAC and the Navy shore establishment is being conducted in close coordination with Commander, Navy Installations (CNI) in order to establish clear accountability for shore facilities support, drive efficiency and effectiveness, and provide significant savings to recapitalize the Fleet in support of the Chief of Naval Operations' initiatives.

NAVFAC's worldwide commands, which are currently comprised of Engineering Field Divisions, Engineering Field Activities, Officers in Charge of Construction, and Public Works Centers, are being consolidated into Facilities Engineering Commands (FECs) that report to two NAVFAC commands: NAVFAC Atlantic in Norfolk, Va., and NAVFAC Pacific in Pearl Harbor, Hawaii (formerly Engineering Field Division Atlantic, and Engineering Field Division Pacific, respectively). FEC Commanding Officers will be double-hatted as Regional Engineers.

Among its many benefits, Facilities Engineering Commands will provide a single touch-point for all NAVFAC products and services. In addition, FECs will enable NAVFAC to better align and focus on Regional and client requirements; provide surge support across regional boundaries; globally implement common business processes; eliminate redundancy and duplication, and return substantial savings to the Navy, Marine Corps, and other Clients.

Establishment of the FECs is being phased in over a two-year period beginning with NAVFAC Midwest (formerly EFA Midwest/PWC Great Lakes), NAVFAC Washington (formerly EFA Chesapeake/PWC Washington), NAVFAC Mid-Atlantic (formerly Integrated Product Team, EFD Atlantic/PWC Norfolk), and NAVFAC Far East (formerly PWC Japan/Officer in Charge of Construction, Far East). NAVFAC Washington was established on July 23, 2004.

For additional information about the NAVFAC organization, visit the NAVFAC webpage at: <http://www.navfac.navy.mil/>

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SECTION ONE:
GENERAL

SECTION 1: GENERAL

1.1 Purpose

This guide has been prepared by Naval Facilities Engineering Command (NAVFAC) Washington in order to guide architects and engineers performing professional services under contract to NAVFAC Washington and to obtain uniformity and coherence in the presentation of the design documents.

1.2 Scope

This guide defines the standards of design, along with the detailed requirements, format and the procedures for preparing and submitting the projects drawings, specifications, cost estimates and other related documents comprising a construction contract package.

1.3 Definitions & Abbreviations

Activity, Station: A military unit, organization, or installation performing a military function. It may also refer to other non-DOD agencies.

Antiterrorism/Force Protection: The Department of Defense (DoD) defines "antiterrorism" as "defensive measures used to reduce the vulnerability of individuals and property to terrorist acts." This is distinct from "counterterrorism," which refers to "offensive measures taken to prevent, deter, and respond to terrorism. Both are part of the DoD concept of "force protection," which brings together all the security disciplines in a broader program to protect service members, civilian employees, family members, facilities and equipment.

Architect/Engineer (A-E): The architectural and/or engineering firm contracted by NAVFAC Washington. The contract will be referred to as the "A-E contract".

A-E #1: The architectural and/or engineering firm contracted by NAVFAC Washington in a Design-Build project that prepares the contract documents for a Design-Build construction contract.

A-E #2: The architectural and/or engineering firm employed by the construction contractor in a Design-Build project who will complete the design and design documents and be the A-E of Record.

Architect-In-Charge (AIC), Engineer-In-Charge (EIC): These are the old titles for a Project Leader (PL) See definition for Project Leader. The designated representative of NAVFAC Washington's Commanding Office, who manages the A-E contract after award and is the government's project administrator. Sometimes referred to as the Navy Technical Representative (NTR).

Construction Criteria Base (CCB): An electronic database on CD ROM, of military and other federal construction agencies' guide specifications, technical manuals, standards, cost estimating systems and other information. The CCB is published by the non-profit National Institute of Building Sciences (NIBS). The CCB is the source for SPECSINTACT, the specification writing system software used by NAVFAC; and of Success, the estimating and cost management system software used by NAVFAC.

Contract Options -

Construction Option: The Contractor's choice of material, design, or method, which exists whenever the project specifications permit. An option does not change the scope of work. The right to select an option rests with the Contractor. The project specifications shall not require bidders to identify the options they intend to select. After the award of the construction contract, the Contracting Officer may require the Contractor to state the options the Contractor intends to exercise.

Bid Option: A unilateral right in a contract by which, for a specific time, the Government may elect to purchase additional services called for by the contract, or may elect to extend the term of the contract.

Contracting Officer: A contract representative of the Government at NAVFAC Washington, responsible for overall management and execution of contractual actions.

Contracting Officer's Technical Representative (COTR): The key technical representative of the Contracting Officer, who performs as follows:

- Coordinates all government technical interfaces with the A-E contractor, monitors compliance with the contract requirements, and takes action on technical correspondence.
- Reviews A-E contractor invoices and supporting information to determine the reasonableness of billing.
- Alerts the Contracting Officer of any potential performance problems and recommends corrective action.
- Evaluates the A-E contractor's proposals and assists in the development of the government's negotiation.
- Prepares evaluation of the A-E contractor's performance.
- The COTR is usually the Activity Operations Director (AOD) of the Integrated Product Team (IPT) where the project is assigned.

Contractor: In this guide, the construction firm contracted by NAVFAC Washington to build a particular project. The contractor's contract will be referred to as the "construction contract". The Contractor is one of only two parties to a government construction contract, the other being the Contracting Officer.

Criteria: The established rules or principles for guiding the architectural and engineering design of facilities. Criteria include guide specifications, military handbooks, UFC's design manuals and government and Non-Governmental standards, codes and guidelines.

Customer: Usually the end-user or occupant of the project being designed or constructed.

Design Manual (DM): See Unified Facility Criteria

Design-Bid-Build (DBB): A project delivery method in which there is a sequential award of two separate contracts. The first contract is for design services. The second contract is for construction. Design and construction of the project are in sequential phases.

Design-Build (DB): NAVFAC Washington's method of Design-Build. This allows NAVFAC Washington to capture the full benefits of the collaborative effort between the construction industry and the A-E design community by providing minimum requirements to allow maximum creativity and value. An A-E is contracted by NAVFAC Washington to compose a Request For Proposal (RFP). The A-E contracted by NAVFAC Washington can be referred to as A-E #1. From this RFP, proposals are solicited from contractors who have contracted a second A-E to complete the plans and specifications. The contractor and his/her chosen A-E are known as the Construction Contractor/A-E #2 team. It should be noted that in order to promote flexibility in the RFP, elements and systems that are unacceptable are sometimes the only ones listed to allow all others as optional means of satisfying performance. In instances where NCPC/CFA/SHPO/MDE approvals are necessary, it is made clear that these are also requirements of the Contractor/A-E #2 team. A-E #1 may conduct user interviews, develop programming documents in order to develop the necessary programming requirements for square footage allotments, room designations, adjacencies, and other unique aspects of the facility. They also may perform a full field investigation in order to provide existing conditions and any site constraints, such as building restriction lines, existing easements, limits for site improvements, etc. In addition NAVFAC Washington may develop a schematic design development package that will meet the approval of all the stakeholders and will allow the procurement of a Design-Build Contract with the Construction Contractor and their A-E #2. The contract document typically includes prescriptive and performance specification requirements.

DOD: Department of Defense.

DrChecks: Design Review and Checking System - a Web-based collaboration tool used in performing design submission reviews.

ECIP: Energy Conservation Investment Program.

Engineer-in-Charge (EIC): Old term for Project Leader (PL). See definition for Project Leader.

Government: The Federal Government, including the Armed Forces.

Guide Specification: A criteria document, describing in a standardized format, the scope and content of project specifications for a specific product, group of products or for a construction procedure. A guide specification is a manuscript designed to be edited to suit the needs of a particular project, eventually becoming a section within the project specifications. Guide specifications are never to be referenced in the project specifications, since until edited, they do not provide needed direction.

Military Handbook (MHDK): See United Facility Criteria.

Naval Facilities Engineering Command (NAVFAC): The design and construction agency for the Department of Navy, including the Marine Corps, and other designated Government agencies. See also the NAVFAC homepage at <http://www.navy.mil/homepages/navfac> for more information.

NAVFAC Washington: A Facilities Engineering Command (FEC) that reports to NAVFAC Atlantic in Norfolk. Homepage: http://www.lantdiv.navfac.navy.mil/pls/lantdiv/url/page/org_efa_ches/ for more information.

Naval Facilities Guide Specifications (NFGS): See Unified Facilities Guide Specifications.

Navy Technical Representative (NTR): The NTR is usually referred to as the PL or Project Leader. The NTR will monitor the performance to ensure compliance with the contract requirements and timely

submission of the work required. The NTR is responsible for the day-to-day administration of the project. The NTR may not take any action, either directly or indirectly, that could result in a change in the pricing, quantity, place of performance, delivery schedule, or any other terms and conditions of the contract (or delivery order). Whenever there is the potential that discussions may impact areas such as described above, the COTR and the Contracting Officer shall be contacted for guidance.

Officer in Charge of Construction (OICC): The Commanding Officer of NAVFAC Washington.

Parametric Cost Estimate (PCE): The budget cost estimate derived through parametrics. PCE uses parametric unit costs for types of construction and quality of materials. It is based on DOD Guidance Unit Cost (DOD GUC). It also contains reports that verify final scope definitions.

Project Leader (PL): The designated representative of NAVFAC Washington's Commanding Office, who manages the A-E contract after award and is the government's project administrator. Sometimes referred to as the Navy Technical Representative (NTR). (NOTE: Project Leader (PL) is our latest term for the NTR, AIC & EIC)

Project Specifications: The complete construction specifications for a specific project, prepared in conjunction with the project drawings. The project specifications, along with the final drawings, comprise the Construction Contract Documents used for bidding and construction.

Public Works Officer (PWO): The authorized representative of the Activity, who is responsible for land and the facilities.

Record Drawings: Drawings showing the actual as built conditions of constructed facilities.

Reference Documents, Standards and Specifications: Those industry and government documents, standards and specifications referenced within the project specifications.

Resident Officer in Charge of Construction (ROICC): The on site field representative of NAVFAC Washington, responsible for the administration and inspection of construction contracts.

SPECSINTACT: A computer-based construction specification writing and processing system in a software program, which allows access to Government guide specifications on the CCB (NAVFAC, COE and NASA) in order for the A-E to assemble and edit a specification tailored to the precise requirements of a specific project. The use of SPECSINTACT is mandatory for NAVFAC Washington Design-Bid-Build project specifications and for the prescriptive Sections used in RFP's for Design-Build projects.

SUCCESS Estimating and Cost Management System: An advanced engineering cost estimating system available on CCB.

Sustainable Design: A process of design that produces a facility that embodies the principles of conserving energy, minimizing adverse impact on the environment resulting from a construction activity or from future operations and enhances the quality of life and productivity of the occupants in the building. See Section 2.14 for a detailed discussion.

Unified Facility Criteria (UFC): Formerly called Design Manual and Military Handbook. A joint Navy and Army criteria document, limited in scope, to a particular discipline of architecture or engineering or a special class of facility. Unified Facility Criteria contains those standards that define the scope. These are documents that define the scope, technical requirements, safety features and, attributes required by the Navy and Army and by rules and regulations. As Design manuals and Military

Handbooks are updated, they are being converted into Unified Facility Criteria. Some Military Handbooks and design Manuals, which are no longer updated, are listed on CCB as “Inactive for New Design” and as “Textbooks.” Because these are no longer updated, they must be used with care and only where other replacement documents from the private sector are not available.

Unified Facility Guide Specification (UFGS): A Guide Specification adopted by the Navy and/or Army for use in construction projects. UFGS’ replace former Naval Facilities Guide Specifications (NFGS) and Civil Engineering Guide Specifications (CEGS).

Value Engineering (VE) and Value Engineering Team Study (VETS): A function oriented, systematic team approach to identify and eliminate or prevent unnecessary cost while maintaining appropriate, or achieving better, functional performance, reliability, maintainability, and safety.

1.4 Responsibilities of the A-E

The A-E shall be responsible for the professional quality, technical accuracy and coordination of all project requirements, including design-bid-build designs drawings and specifications, design-build documentation, and other services furnished under the A-E contract. The A-E shall, without additional compensation, correct or revise errors or deficiencies in the project design, including the project drawings and specifications, and other services furnished under the A-E contract.

The Government's review, approval, acceptance of, or payment for any of the services required under the A-E contract, shall not be construed as a waiver of any rights under the A-E contract or of any cause of action arising out of the performance of the A-E contract. The A-E shall be, and remain liable to the Government, in accordance with applicable law, for damages to the Government caused by the A-E's negligent performance of any of the services furnished under the A-E contract.

NAVFAC policy requires A-E’s to follow applicable NAVFAC, DOD, and other criteria where appropriate. However, where a specific criteria provision is not applicable or ill suited to the problem at hand, the A-E shall use professional judgment in applying the criteria or in revising the requirement to suit the project. Conformance to Navy criteria does not release the A-E from responsibility for professional quality and judgment.

1.5 Errors & Negligent Performance

Design errors or omissions, which result in damages or extra cost to the Government, will be evaluated for potential A-E financial liability. If the Government determines that the A-E is financially liable for a design deficiency, the A-E will be so advised by official correspondence. NAVFAC Washington actively pursues reimbursement of costs incurred by the Government as a result of the A-E’s errors and/or negligent performance.

The preferred method of settlement of A-E financial liability is for the A-E to negotiate directly with the Contractor. Where the A-E cannot reach an agreement with the Construction Contractor or if the A-E declines to negotiate, NAVFAC Washington will arrange settlement directly with the Contractor and will bill the A-E.

1.6 Correspondence

All correspondence shall be provided in duplicate and addressed to the Commanding Officer, NAVFAC Washington; 1314 Harwood St., SE; Building 212, Washington Navy Yard, DC 20374 5018, attention of the code of the PL, e.g., Code CH11, CH12, etc. The project title and contract number and, if applicable, the Work Order number assigned to the A-E contract shall be used on all reports and correspondence relative to the A-E contract.

Correspondence regarding invoicing shall be e-mailed to invoice@efaches.navy.mil and marked for the attention of Code CBO. The PL's name shall be included.

Reports of all conference and telephone instructions shall be prepared and provided in duplicate to the PL within five (5) days from the date of such conference or telephone instructions. Two (2) copies of these reports and instructions shall be forwarded to the Activity POC by the A-E.

1.7 Construction Contract & Project Specification Numbers

The construction contract number and the project specification number are provided in the statement of architect/engineer services (scope of work). The construction contract number and specifications number shall appear on each sheet of the project drawings; the project title and specification number shall appear on each sheet of the project specifications.

1.8 Quality of Work

Work shall be prepared in accordance with current criteria established by DOD and NAVFAC and shall be in accordance with the best engineering practices. All submittal documents and reports shall be reviewed by the A-E before being submitted. The A-E shall coordinate the submissions of all disciplines and shall perform a quality review to ensure that the project is buildable and that no conflicts exist. Qualified persons other than those preparing the documents shall make reviews.

The A-E's work will be reviewed by the various architects & engineering disciplines of NAVFAC Washington to ensure compliance with the project scope, program and applicable Government requirements and criteria. While the Government may provide technical comments, the technical accuracy of the project and the coordination between disciplines is solely the responsibility of the A-E.

1.9 Changes in Scope

The A-E is reminded that A-E contract responsibility is directly to NAVFAC Washington and at no time shall changes in the scope be made at the direction of an Activity or Clients. During the progress of the work, the A-E may expect minor changes in design criteria and shall make necessary adjustments, accordingly. Where changes to the scope of work are required, the A-E will be authorized in writing, and the Contracting Officer will make appropriate modifications to the A-E contract.

The A-E shall be responsible for the best engineering solution which provides a complete and usable facility within the "Design To" cost and/or any statutory square meter/square footage and cost limitations as set forth in the authorizing 1391. The A-E shall immediately notify the PL, in writing, if established cost or square meter/square foot limitations appear to be inadequate to accomplish the project scope.

1.10 Use of Success, SpecsIntact & DrChecks

SUCCESS cost estimating program & SPECSINTACT are on the CCB disk. SPECSINTACT is mandatory for all Design-Bid-Build projects. New Navy guide specs for Design-Build projects are now available and must be used for all projects in FY05 and beyond. SUCCESS is the required cost-estimating program to be used on all projects. However, in extreme cases and with prior approval from an NAVFAC Washington Cost Estimator, other programs that use the “work breakdown structure” can be used. Please coordinate with the project PL.

NAVFAC Washington has adopted the Design Review and Checking System (DrChecks) – a Web-based collaboration tool developed by the U.S. Army Corps of Engineers’ Construction Engineering Research Laboratory (CERL) – as a standard practice. All projects must use DrChecks for their design review submissions, unless approved otherwise by the Product line Coordinator for Design.

DrChecks can be found at <http://www.projnet.org/>

Briefing and training material can also be found at the above website. Questions about your project in DrChecks should be directed to the NAVFAC Washington Project Leader. Questions about the DrChecks program itself - registration, firewalls, browser, security, etc. should be directed to the DrChecks helpdesk at 1-217-367-3273 or 1-800-428-4357.

1.11 Evaluation of A-E Performance

Upon completion of the design phase, the PL will prepare an evaluation of the A-E's performance. Another evaluation, judging the A-E's design and performance during construction, will be prepared by the ROICC. Copies of outstanding and/or unsatisfactory evaluations will be automatically sent to the A-E.

Copies of all evaluations will be made available to future selection boards at NAVFAC Washington and will be made available to other DOD and Federal agencies for their use through a computerized database.

1.12 Computerized Graphic Design

The use of computerized graphic systems results in a reduced level of change orders, claims and cost of rework due to design errors. A-Es performing work for NAVFAC Washington will be required to utilize computerized graphic design systems. When using computerized graphic design systems, the A-E shall create the drawings in an electronic database conforming to the “REQUIREMENTS FOR COMPUTER GENERATED SUBMITTALS TO THE ENGINEERING AND DESIGN DIVISION”.

These mandatory requirements are based on the “AIA CAD Layer Guidelines” as adapted by all Atlantic Division components of the Naval Facilities Engineering Command. They are required in order to establish uniformity among all electronic drawings submitted to NAVFAC Washington or any other NAVFAC component and in order to facilitate “electronic drawing exchange” as the US Government moves toward a “paperless organization”.

The A-E shall submit the database to the Government as indicated in Section 3.7.2.

SECTION TWO:
GENERAL DESIGN
REQUIREMENTS

SECTION 2: GENERAL DESIGN REQUIREMENTS

2.1 General

It is NAVFAC policy to retain qualified professionals and to accomplish designs according to NAVFAC criteria within scope, fiscal and legal constraints.

2.2 Quality of Architectural/Engineering Design

Excellence in architectural/engineering design is a prime goal of the Government. Accordingly, quality architectural design that is functional, environmental and energy conscious and compatible with existing elements is required for all projects. Good architectural design is proportional to professional design effort, not to project cost. Applied or cosmetic architectural design is not cost effective and is unacceptable.

At a minimum, quality of engineering design must provide appropriate facilities at the lowest practical construction cost, with due consideration for economy in maintenance and operation. The construction materials must be of a quality that is consistent with the intended use of the facility and reflect local availability and construction skills. New materials and methods should be considered, but only if they provide an economic or functional advantage.

2.3 Quality Assurance/Quality Control (QA/QC) Program

In an effort to reduce construction change orders due to design errors and omissions, the Navy has initiated a Quality Assurance/Quality Control Program. The A-E shall develop, execute and demonstrate that the project drawings and specifications have gone through a rigorous review and coordination effort. The requirements are as follows:

- With the Fee Proposal: The A-E shall provide an outline of the quality control program that will be used during the design process, along with its associated fee.
- 2 Weeks after the NTP (Contract Award): The A-E shall submit a detailed QA/QC Plan, describing each step that will be taken during the development of the various phases of design. Each step should have an appropriate space where a senior member of the firm can initial and date when the action has been completed.
- With the 100% Submittal: The A-E shall submit the completed QA/QC Plan, along with the latest marked-up documents (drawings, specifications, etc.) necessary to ensure that a thorough review and coordination have been completed.

2.4 Field Investigation & Site Visits

The A-E shall visit the project site only after making arrangements with the PL, who will make an appointment with the Activity's Public Works Officer (PWO)/Staff Civil Engineer or his representative.

Upon the request of the A-E, all available information pertaining to existing conditions will be made available. The A-E will be responsible for going through the station's drawing files and pulling drawings pertaining to existing conditions. It is the responsibility of the A-E to evaluate and verify this information. Site investigations made by the A-E shall identify all special conditions and dimensions that might affect and/or be affected by the proposed work. Whether for a new project or a renovation, all field investigation shall be thorough and detailed to ensure accurate representation of existing conditions. The A-E shall NOT rely solely on existing information, such as utility or record drawings, for the new design, but shall verify all critical existing information.

Poor or inadequate field investigation and site visits result in unsatisfactory design and extended costs and time for construction.

The A-E, as part of the site investigation, shall investigate and identify potential hazardous materials as discussed in Section 3.23.

2.5 Provision for the Handicapped

All facilities that are open to the public, to limited segments of the public, visited by the public in the conduct of normal business, or those that hire or have the capacity to hire civilian personnel, shall be designed and constructed to be accessible to the handicapped.

Every facility shall be designed to ensure access to the handicapped unless its intended use is specifically restricted to able-bodied military personnel. Examples of such restricted facilities are bachelor officer quarters (BOQs), bachelor enlisted quarters (BEQs), certain dining facilities (closed messes), or vehicle and aircraft maintenance facilities where all work is performed by able bodied military personnel.

The DOD directive of December 15, 1993 requires the application of the more stringent of either the Americans with Disabilities Act Accessibility Guidelines (ADAAG) or the Uniform Federal Accessibility Standards (UFAS). For purposes of determining the stricter standard the A-E shall use the above criteria EXCEPT, The A-E shall not use any "exemptions from application of the standards" stated in ADAAG.

The Naval Facilities Engineering Command has developed a Planning and Design Policy Statement – 94-01 (that can be found in its entirety in Appendix VI). The purpose of this Planning and Design (PDP) Statement is to provide guidance to accomplishing a barrier-free design in compliance with: (a) the Uniform Federal Accessibility Standards (UFAS), published as Federal Standard 795; and (b) Americans With Disabilities Act Accessibility Guidelines (ADAAG).

The A-E can find the complete ADAAG and UFAS on CCB.

2.6 Landscape Design

When a design-bid-build project requires landscaping, separate drawings shall be prepared. The following information shall be provided in the project drawings and project specifications:

- A. Location of plant material

- B. Extent of material
- C. Plant and planting details
- D. Plant material list, including quantity and sizes
- E. Provisions for protection of new and existing plants during construction
- F. Maintenance of plants during construction; i.e. watering
- G. Month(s) of the year when planting can occur.

For design-bid-build and design-build projects, the design or requirements shall be consistent with the Activity's landscape master plan and with the landscaping of the surrounding area.

2.7 Interior Architectural Design

All building projects require Interior Architectural Design as part of the construction bid documents. These services include program development, architectural finish selections and signage. The extent of these services shall be defined at the pre-design meeting and shall be provided as outlined in Appendix III. A professional interior designer shall coordinate these services except in the cases where only exterior architectural finishes and signage are required. Architectural finish boards shall display all proposed finishes. The architectural finish boards are used as reference items; they do not replace detailed written documentation required in the construction bid documents.

For projects where NAVFAC Washington interior designers perform interior architectural design services, the A-E will be responsible for coordinating and incorporating documentation into the construction bid documents.

2.8 Design Criteria

The former NAVFAC and Army criteria documents have been redesignated “Unified Facilities Criteria” (UFC) which include “Unified Facilities Guide Specifications” (UFGS). These supercede the former NAVFAC and COE manuals and guide specifications. Projects shall be designed in accordance with the current Unified Facilities Criteria or in accordance with designated commercial criteria. Exceptions to the use of the above criteria require approval by the NAVFAC Washington Criteria Coordinator, Heinz R. Trechsel, 202-685-3123.

All UFC and most NAVFAC, Army, Air Force, and other Government criteria documents, as well as many industry publications, are available on the CCB.

The NAVFAC Washington Criteria Coordinator Heinz Trechsel, 202-685-3123, can answer questions regarding criteria and assist in obtaining or interpreting criteria documents. Suggestions for improving NAVFAC Guide Specifications should be submitted to the technical proponent of the specifications. The proponents are listed on the Internet under “Guide Specifications Page for UFGS.

2.8.1 Criteria Application

A. For all design projects:

- MIL-HDBK 1190, "Facility Planning and Design Guide" available on CCB.
- Unified Facilities Guide Specifications (UFGS). In some instances use NAVFAC Washington regional guide specifications in lieu of NAVFAC-wide guide specifications)
- Mil-HDBK-1006/1A. "Policy and Procedures for Project Drawing and Specification Preparation"
- UFC 1-200-01, Design: General Building Requirements. Available on the Internet.
- UFC 3-600-01, Design: Fire Protection Engineering for Facilities.

B. As applicable to each project (review with the Project Leader):

- Appropriate UFC, DOD and NAVFAC design publications
- Appropriate NAVFAC P - Publications
- NAVFAC instructions, industry documents and other criteria noted in the statements of specific requirements in this guide
- Other criteria as required by the scope of work.

C. As applicable to Air Force projects (review with the Project Leader):

All Air Force Regulations, Engineering Technical Letters, Pamphlets, and Manuals must be incorporated into all Air Force jobs. These criteria are available on CCB.

2.8.2 Criteria Resources

In cooperation with the Department of Defense, the National Institute for Building Sciences (NIBS) has developed the Construction Criteria Base (CCB), an electronic database of military and other federal construction agencies' guide specifications, technical manuals, standards, cost estimating systems and other information.

- **Data Bases:** CCB contains all UFGS Guide Specifications, including regional versions, and all UFC and NAVFAC design publications (Military Handbooks and Design Manuals). In addition, guide specifications of NASA, VA, DOE and other agencies are included, as are lists of referenced standards. CCB also contains the specification preparation system SPECSINTACT that is mandatory for all NAVFAC Washington design-bid-build specifications for Division 1 and selected technical sections under design-build.
- **CCB is available on a subscription basis from:**
 - National Institute of Building Sciences*
 - 1090 Vermont Avenue NW*
 - Suite 700*
 - Washington, DC 20005-4905*
 - Telephone 202-289-7800*
 - <https://www.ccb.org/ccbsubscribe/Subsmain.asp>
- **Programs:** The CCB system also includes many useful computer programs for use in the design of facilities:

1. **FULL TEXT SEARCH AND RETRIEVAL.** It is possible to search any CCB database for any word, or group of words. The user can then see the full text on the computer screen, copy the documents or print them.
2. **GRAPHIC CAPABILITIES.** All graphics, which are contained in the NAVFAC Guide Specifications or documents incorporated in CCB, can be called up to the screen for viewing. CCB contains CADD files that can be copied from CDROM and used in drawing preparation. They are in AUTO CAD "DWG", AUTO CAD "DXF" or Intergraph "CELL" format.
3. **SPECSINTACT.** A proprietary program developed by NASA, SPECSINTACT is a unique, highly productive specification processing system.
4. **SUCCESS COST ESTIMATING SYSTEM.** Success contains a database with over 10,000 individually priced items. Users have the capability to apply markup to any of the specification sections for prime and up to fifteen subcontractors, and can modify material, labor and equipment unit prices.

2.9 Basis of Design Report

To ensure that projects are developed in conformance with established NAVFAC criteria and requirements of the Activity and that they are within authorized scope and funds, a Basis of Design Report shall be submitted at the 35% submission of each design-bid-build project or as required by the Submittal Requirements list for design-build projects. The Basis of Design Report shall describe all aspects of the project by analytical methods of evaluation for selecting building systems. A detailed narrative report shall be submitted to justify each system selected, (e.g., building orientation and sighting, construction systems, materials of construction, fenestration, foundation, framing, electrical, mechanical, etc). The report shall list all major design criteria (e.g., Design Manuals, Military Handbooks, etc.) used and shall present justification for any proposed departure from the criteria. A recommended outline of the Basis of Design Report is detailed in Appendix II.

2.10 Construction Quality Control (QC)

Quality Control is a system whereby the Construction Contractor provides significant and specific inspection, testing, and documentation to satisfy both the Contractor and the Navy that the work being performed meets the requirements of the project drawings and specifications.

Quality Control requires particular care and attention by the A-E in the formulation of the construction contract documents. The general concepts and requirements for Quality Control are contained in Specification Section 01450, "Quality Control". The A-E shall arrange, through the PL, to meet with NAVFAC Washington's QC representative regarding the specific requirements of QC, prior to the development of the 35% Submission (DBB) or Draft Submission (DB).

2.11 Fire Protection Services

The A-E shall have on staff or retain the services of a registered Fire Protection Engineer. The engineer must be directly involved in the design and review of all fire protection features, life safety features and construction criteria for the project. At the 35% submission, the registered Fire Protection Engineer shall

prepare a report as outlined in the Basis of Design, Appendix II. Furthermore, the Fire Protection Engineer shall review the 100% submission and certify in writing that the design is in compliance with all applicable criteria. This certification letter shall be submitted to the appropriate NAVFAC Washington Fire Protection Engineering representative at the 100% submission.

2.12 Design Review Submissions

The Government will review all submissions. Comments will be provided using the DrChecks program. The A-E shall resolve and incorporate the comments into the next submission. The A-E shall respond to all comments with detailed responses in the DrChecks program, indicating what action will be taken to resolve each comment. If a comment is not incorporated, the A-E shall provide a rationale for not incorporating the comment. These responses must be submitted one week before the next submission or within 3 weeks after the return of the government review, whichever comes first.

2.13 Metric Policy

As mandated by Congress, it is NAVFAC policy to use the metric system of measurement (System International or SI) for construction contract documents on all MILCON, BRAC, and Family Housing projects. Other new construction may be designed in metric as determined on a case-by-case basis. Use the guidelines in Appendix IV.

Most building products (90-95%) have not or will not change in actual size by the conversion to metric. These products simply are or will be relabeled in metric units and therefore product availability is not a significant problem.

Where required, SI metric units must be used from the planning stages through design, construction, and maintenance, and all dimensions on Drawings, in Specifications, Cost Estimates, Studies, Value Engineering Team Studies and Reports, etc. must be in Metric.

Where permits are required from state to state or local agencies, acceptability of metric drawings and calculations by the governing authority should be verified. If the permitting authority does not accept metric, the necessary applications will need to be in Inch/Pound units, but all construction documents will remain in metric.

DOD and NAVFAC design criteria and referenced documents are available either in dual units or as separate inch/pound and metric documents. Where metric dimensioned guides are not available, the designer shall convert all dimensions for use in the design. Non-availability of metric manuals is no reason not to prepare the designs in metric.

Specific Metric Design Guides:

- For building dimensions and for equipment, use millimeters (mm). For site work and surveying, use meters (m).
- Round all dimensions to an appropriate number of significant digits without sacrificing or exaggerating the accuracy implied. As a rule, building dimensions should be rounded to the nearest 10 mm.
- Do not use dual units on drawings or in specifications.
- Value Engineering Team Studies (VETS) shall not override the use of metric.
- Use metric (SI) units in cost estimates and Parametric Cost Estimating (PCE) in projects

designed in metric.

Metric Drawings:

Metric drawing scales are true ratios and are so indicated. They are the same for both architectural and engineering drawings. Conform to ASTM E 713, Selection of Scales for Metric Building Drawings. Preferred scales are:

1:1	Same as full size	1:100	Close to 1/8"=1'-0"
1:5	Close to 3" = 1'-0"	1:200	Close to 1/16" = 1'-0"
1:20	Between 1/2" = 1'-0" and 3/4" = 1'-0"	1:500	Close to 1" = 40'-0"
1:50	Close to 1/4" = 1'-0"	1:1000	Close to 1" = 80'-0"

Concrete Block and Recessed Ceiling Fixtures:

Federal law excludes concrete block and recessed ceiling lighting fixtures from mandatory conversion to metric dimensions. To comply with this requirement, place the following note on all relevant drawings:

“All dimensions on this drawing are shown in round metric numbers. Where concrete block or recessed lighting fixtures are shown, the contractor has the option to provide these products produced in inch-pound dimension. If inch-pound products are used, the contractor bears the responsibility and design cost to ensure coordination and compatibility with other building materials shown or specified.”

Resources for Metric Construction:

The “Metric Guide for Federal Construction provides additional information on the use of metric in Federal construction. It also includes a list of additional useful references. The Guide is available on CCB for viewing and can be purchased in hard copy from:

*The National Institute of Building Sciences
Suite 700
1090 Vermont Avenue, NW
Washington, DC 20005
Phone: 202-289-7800*

<https://www.nibs.org/pubscmc.html>

2.14 Sustainable Design

The Secretary of Defense has stated, “The Department of Defense must improve its environmental performance by actively implementing policies that embrace pollution prevention in all phases of the acquisition process, the procurement of goods and services, and in life-cycle management of our installations.”

It is the policy of NAVFAC to apply integrated design approaches to all facilities and infrastructure projects such that sustainability principles and concepts are incorporated to the fullest extent possible, consistent with budget constraints, and customer requirements. It is further the policy of NAVFAC to seek to accomplish sustainable design with no increase in first costs. This policy applies to renovation

and alteration projects as well as new construction. It also applies to designs associated with all procurement methods, including design-build.

It is mandatory that these principles be discussed and implemented throughout the design process. The A-E shall discuss methods and elements considered for Sustainable Design in the Basis for Design Report.

Some examples of construction and building features and components that embody Sustainable Design are:

Recycling of demolition material and other construction waste:

- Separating demolition debris for off site recycling
- Recycling demolition debris on-site and reusing same
- Recycling construction material packaging
- Maximizing repetitive use of concrete form work and using low-waste form work
- Reusing existing brick to the maximum extent possible

Increasing use of recycled construction material, low or no VOC materials and adhesives, and materials produced with less embodied energy:

- Using site furnishings containing recycled material
- Using geo-textile/waterproofing materials with recycled content
- Using concrete composed of locally produced materials
- Using concrete with only non-toxic admixtures
- Using expansion joint fillers with recycled content
- Using recycled ash concrete and concrete with recycled aggregate
- Using unit masonry with recycled content
- Using precast concrete where possible
- Using steel studs and frames with recycled content
- Using metals designed for ease of future recycling
- Using steel rather than aluminum or stainless steel (less embodied energy used)
- Using wood products from certified sustainable programs i.e. “Smart Wood Program”
- Minimizing use of plastics with harmful VOC emissions
- Using plastic with recycled content
- Using waterproofing and dampproofing membranes with recycled content
- Using building insulation which are not produced with CFC or HCFC or other materials which out gas VOCs
- Using rigid fiberglass or expanded polystyrene (EPS) insulation board
- Encapsulating insulation to ensure that it does not enter occupied space of air handling systems
- Using insulation with recycled content, i.e. cellulose
- Pre-painting doors and frames off-site
- Using gypsum board products with recycled content
- Using suspended acoustical ceiling systems with recycled content
- Using low solvent or water based adhesives with low or no VOCs
- Using rubber or linoleum resilient flooring with recycled content
- Using paints and sealants without aromatic hydrocarbons, halogenated solvents, mercury compounds, lead or other heavy metals
- Using metal toilet compartments or compartments with recycled content

Envelope Considerations:

- Using insulation in the walls and roof that exceed the standard criteria
- Conducting a Job-specific moisture analysis to determine the need for and location of a separate vapor retarder and/or an air barrier to minimize the loss of thermal performance of insulation due to moisture buildup and to increase the life expectancy of the walls and roofs
- Minimizing convection losses through building envelope with proper detailing, weather stripping and sealants
- Using a reflective barrier in the roof in order to reduce heat gain

Natural and Artificial Lighting Considerations:

- Optimize use of windows and skylights for natural day lighting
- Using high performance glazing considering exterior exposure, shading, U values and light transmittance
- Using window systems which allow low heat loss through glazing seals
- Using large skylights for natural day lighting in order to reduce lighting loads
- Using skylights with diffusers and baffles for a more uniform distribution of light
- Using windows that incorporate light shelves to bounce light further into the building
- Using daylight sensors to reduce foot-candles of illumination on bright sunny days
- Using reflective and perforated blinds on windows to reduce glare and reduce heat transmission through the glass

HVAC Considerations:

- Use appropriate plug loads (approx. 0.7 – 1.0 W/sf) and lighting loads in cooling calculations. Measurement of actual tenant plug loads is sometimes appropriate.
- Do not include safety factors in load calculations.
- Use high efficiency equipment and motors.
- Use variable speed motors where appropriate.
- Minimize pressure losses in ductwork and piping to minimize fan and pump motor sizes.
- Use variable speed fans on cooling tower and maintain a close approach.
- Specify highest off the shelf efficiencies for major energy consuming equipment.
- Use computer-based analysis tools to evaluate building loads, size equipment, and simulate complete building performance. The use of advanced load calculation and building simulation software such as DOE-2.1 and BLAST (latest versions) are encouraged, especially on complex projects.

Indoor Air Quality Considerations:

- Follow the requirements of ASHRAE 62, “Ventilation for Acceptable Indoor Air Quality”.
- Encapsulate insulation to ensure that fibers do not enter the occupied space or air handling systems.
- Purge the building air prior to occupancy (without using the HVAC system) to remove outgases from finishes, carpet, furniture, etc.
- Use methods other than duct lining for acoustical treatment of air systems.

Electrical Considerations:

- Reducing lighting loads by:
- Reducing ambient foot-candle (or lux) levels to 30 – 35 FC (323 – 377 lux) in general open offices by using pendent hung, indirect/direct lighting fixtures;
- Using energy efficient fluorescent lighting fixtures;
- Using occupancy daylight sensors for light fixture control.
- Basing design on more accurate (lower) assessments of plug load.
- Using variable speed drives.
- Using energy efficient outdoor site lighting.

It is important when considering various Sustainable Design features that the A-E maintain a holistic approach with all Architectural, Interior Design and Engineering disciplines involved. These features should be considered in the earliest stages of design and coordinated throughout contract document preparation.

SECTION THREE:
A-E CONTRACT SUBMISSION
REQUIREMENTS

SECTION 3: A-E CONTRACT SUBMISSION REQUIREMENTS

This section defines the various items of work that may be required by the Statement of Architect/Engineer Services Requirements (Scope of Work) as outline in the "Contract Submissions Requirements List".

3.1 Design Quality Assurance/Quality Control Program

The A-E shall submit a detailed Quality Assurance/Quality Control plan. The plan shall be specific to the project under contract and written in a report form in accordance with Section 2.3.

3.2 Program Development

3.2.1 Programming Development (Required for ALL projects)

3.2.1.1 Objective

In order to verify the project requirements, the A-E shall develop a program by conducting meetings, interviews, and on-site work sessions with NAVFAC Washington, the client, and any other necessary activity personnel and approving authorities. A preliminary review of the Draft Programming Document shall be presented to the PL.

3.2.1.2 Procedures

The A-E shall conduct interviews and site investigations in order to determine the needs of the User, and the existing conditions and facts. The A-E is encouraged to use a systematic approach of organized on-site work sessions in order to conduct interviews, collect data and verify information. Coordinating with the PL and the Activity, all necessary User groups, base personnel and approving authorities should be part of the work sessions.

3.2.2 Draft Concept Submission (For ALL DBB projects and some DB projects, coordinate with the project PL)

Provide three schematic project designs that propose separate and distinct design solutions for the project requirements. A preliminary review of the schematic design solution shall be presented to the PL. The A-E shall then finalize the Draft Concept and present to the Government. Inadequate submissions will be returned for resubmission.

Content

- A. Site plan of each scheme

- B. Floor plans at the appropriate scale indicating block plans and adjacencies. Plans shall be a direct result of the programming effort.
- C. Sketch elevations or perspectives of buildings
- D. A narrative report, which contains a summary of all programming information including a table showing gross and net area tabulations.
- E. Description of various design features
- F. Concept Cost Estimate prepared utilizing the SUCCESS cost estimating system and the parametric cost models. Since little design has been developed, careful attention should be exercised to insure that all major cost elements are properly considered and evaluated. The Concept Cost Estimate shall include a system quantity and unit cost for every system in the project.

3.2.3 Final Concept Submission

NOTE: For ALL DBB projects and some DB projects, coordinate with the project PL.

3.2.3.1 Objective

To provide a schematic project design from which the Government can determine adequacy of design, the functional arrangements, project costs and adherence to criteria.

3.2.3.2 Contents

If not done in the Draft Concept Submission, the A-E shall provide programming results.

- A. A vicinity plan, showing existing and new topography, utilities, access roads, extent of parking and site circulation, as well as relationships to other buildings
- B. Floor plans at appropriate scale, showing all walls, openings, rooms and built in features
- C. A design analysis, outlining options considered in each discipline and reasons why the system or design presented was chosen
- D. Discussion of the proposed approach to satisfy design requirements for all building systems
- E. Building sections and typical wall sections, showing floor to floor heights
- F. Elevations, showing fenestration and exterior building materials
- G. Drawings showing locations of the mechanical equipment rooms, shafts, and outside air, exhaust air, and relief air louvers. Also show the block outline layout of the major mechanical equipment, such as, chillers, boilers, air handling units, and incoming utilities, if any.
- H. Existing condition floor plans and other drawings need to show location and extent of hazardous materials, such as asbestos, lead, PCB, Mercury, and other materials classified by

EPA or OSHA as hazardous (such as fluorescent lamps or bird droppings.) For buildings built before 1980 do not test for or indicate on drawings the extent of lead paint; include a statement on drawings and in specifications that all painted surfaces are assumed to contain lead.

- I. Space tabulation of net square/meters or square/footage, by room, and total gross square/meters or square/footage.
- J. Cost estimate based on SUCCESS cost estimating program. Lump sums will not be acceptable. A design contingency should be used to account for the preliminary nature of the design.

3.2.3.3 Procedures

- A. The Concept Submission shall be submitted to NAVFAC Washington for review prior to presenting it to the Activity.
- B. The A-E shall prepare and present to the Government a presentation of the final concept design, with drawings mounted on foam core board.
- C. The A-E shall submit record copies of items as indicated in the "Contract Submission Requirements List".
- D. If the submission is determined to be inadequate, it will be returned for resubmission.

3.3 Parametric Cost Estimating (PCE) for the MCON Team Planning & Programming Process (MTP3)

A submission of the revised 1391 Plus and all of its supporting material that has the final scope of the project defined, cost verified and has been reviewed and approved by the Activity, Major Claimant, NAVFAC Washington and NAVFAC Headquarters.

3.3.1 Draft PCE

3.3.1.1 Objective

To provide an accurate scope and cost estimate with supporting material ready for review and approval by the Government.

3.3.1.2 Contents

The A-E shall submit all the elements of the Parametric Cost Estimate as outlined in Appendix I.

3.3.1.3 Procedure

- A. The A-E shall conduct interviews with various members of the MILCON Team Process (MTP3). The team shall include the Major Claimant, Activity, User, A-E Contractor, NAVFAC Washington, and NAVFAC Headquarters. The A-E is encouraged to use a systematic approach of organized, on-site work sessions in order to conduct interviews, collect data and verify information. Coordination with the MTP3 Team and all necessary user groups, base personnel, and approving authorities shall be part of the work sessions.
- B. The A-E and his engineers shall conduct site investigation in order to verify existing conditions and the adequacy of existing utilities, the need for demolition, and removal of hazardous material.
- C. The cost estimate shall be based on Primary Facility square meter/square foot cost per DOD Guidance Unit Cost (GUC) and input from the NAVFAC Washington cost estimator.
- D. The A-E shall present the Draft PCE to the MTP3 Team.
- E. The A-E shall conduct an “on-board” meeting with the MTP3 Team to finalize all comments.

3.3.2 Final PCE

3.3.2.1 Objective

To provide an updated 1391 Plus with a cost estimate that is derived through parametrics and is based on thorough site investigations, engineering and interviews.

3.3.2.2 Contents

The A-E shall submit all the elements of the Parametric Cost Estimate as outlined in Appendix I. It shall be thoroughly reviewed, coordinated and approved by the MTP3 Team.

3.4 Design Development (35%) Submission

A submission of the A-E's project documents and supportive design calculations that clearly show the project design, the A-E's knowledge and use of NAVFAC criteria, formats and conventions, as well as adherence to the project scope and previously approved submissions.

3.4.1 Objective

To provide the Government with project drawings, calculations, cost estimate, and outline specifications in sufficient detail to evaluate the design, its adherence to systems selection criteria and the A-E's ability to interpret the criteria and prepare biddable documents.

3.4.2 Contents

- A. Project drawings, developed to contain the requirements listed in MIL HDBK 1006/1, Appendix A, "Example of 35 Percent Facility Design Requirements", as well as floor plans showing layout of major equipment and systems a single line layout of ducting and piping, with all drawings printed at half size. The mechanical drawings shall also show the

development of the schematic and riser diagrams for all HVAC air and water systems, domestic cold and hot water

- B.** systems, storm and sanitary systems including venting. For other specific mechanical requirements, refer to paragraph 3.4.2K below.
- C.** The Basis of Design Report, in accordance with the format indicated in Appendix II. (Note: The revised Basis of Design Report, which incorporates all comments from this review, shall be submitted with the next submission.)
- D.** Outline specifications, in accordance with the format described in Section 5 of this Guide. (Note: Proprietary items of work shall not be used without prior approval by the Government. Request for and justification of proprietary items must be included with the 35% submission.)
- E.** 35% cost estimate using SUCCESS Cost Estimating System. Refer to Section 6, “Cost Estimates”.
- F.** 35% calculations for main building systems and major equipment as applicable to each discipline. Mechanical and plumbing calculations shall be complete and include all calculations necessary to justify the systems and equipment shown and intended to be in the project. Mechanical calculations shall include; but not be limited to; indoor and outdoor design conditions, code requirements, U-value calculation, room-by-room heat loss and heat gain calculations, heating and cooling load loads and zone loads, psychrometric analysis of each air handling system, and preliminary equipment selections to justify equipment shown in the drawing and develop electrical power requirements. Plumbing calculations shall show the derivation of domestic cold water and hot water demand, sizing of the storm and sanitary sewer systems and similar calculations for special plumbing systems such as natural gas, medical gases, compress air, etc.

Structural calculations shall include, as a minimum, the selection of specific values for the various criteria parameters and the derivation of the applied loads for the Dead load, Live Load, Snow Load, Wind Load, Seismic Load and all specialized loads to be applied to the structure. Structural calculations shall indicate whether Wind Loads or Seismic Loads will control the design of lateral force resisting elements.

- G.** Preliminary architectural finish board(s), two (2) copies, showing samples of proposed interior and exterior building finishes as outlined in Appendix III.
- H.** Draft Stormwater Management and Erosion/Sediment Control reports, when required by the project scope “Contract Submission Requirements List”.
- I.** Hazardous Materials Removal Report
- J.** Fire Protection – A Fire Protection Basis of Design report. (refer to Basis of Design Report in Appendix II) Qualifications of the Fire Protection Engineer responsible for the project development. Water flow test report indicating the available water supply. (refer to section 3.12) Hydraulic calculations determining the need for a fire pump.
- K.** The following specific requirements shall be included in the mechanical drawings.
 - 1. The HVAC drawings shall include the riser diagrams for all air and water systems including but not limited to chilled water, heating hot water, steam, supply air, return air,

exhaust air, and any other system for which a riser diagram would be an appropriate graphic presentation.

2. Plumbing drawings shall show riser diagrams for domestic hot and cold water, storm, and sanitary waste and vent piping, and other special plumbing systems, such as, gas piping, compressed air, medical gases, etc.
3. The mechanical equipment rooms shall be at a minimum of the metric equivalent 1/4" scale or twice larger than the corresponding floor plans. The mechanical room plan layout shall be substantiated by at least two cross- sections taken at right angles to each other.
4. Separate floor plan drawings shall be provided for the air distribution ductwork and piping layouts when the extent of the ductwork and piping is generally identical.

3.4.3 Procedures

- A. The A-E shall deliver to the PL the documents indicated in the "Contract Submission Requirements List".
- B. The basis of design report, outline specifications, preliminary cost estimate and preliminary calculations, shall be submitted in spiral bound format.
- C. DrChecks shall be used for all review comments and responses.
- D. If the submission is determined to be inadequate, it will be returned for resubmission.

3.5 Progress (60%) Submission (for DBB Projects)

A submission of project documents and supportive material that clearly shows the development of the project to the 60% stage.

3.5.1 Objective

To provide the Government with project drawings, cost estimate and project specifications sufficient to evaluate the A-E's adherence to detail and systems design criteria and to ensure that comments made during previous reviews were understood and incorporated.

3.5.2 Contents

- A. Project drawings that are developed, in general, to the 60% stage but which have no individual discipline less than 50 percent complete, with all drawings printed at half size
- B. Project specifications, printed single spaced, in draft form
- C. Cost estimate using SUCCESS Cost Estimating System. Refer to Section 6, "Cost Estimates".
- D. Calculations for system component sizing/design

- E. 100% Stormwater Management and Erosion/Sediment Control reports when required.

3.5.3 Procedures

- A. The A-E shall deliver to the PL the documents indicated in the "Contract Submission Requirements List".
- B. The DrChecks Program will be used for all review comments. The A-E shall use the DrChecks Program for responding to all review comments.
- C. If the submission is determined to be inadequate, it will be returned for resubmission.

3.6 Contract Documents (100%) Submission (for DBB Projects)

A submission of A-E's construction documents and supportive materials are biddable documents ready for advertisement by the Government.

3.6.1 Objective

To provide the Government with construction documents that are technically complete, in the proper format, biddable, adequate in design detail, constructible, coordinated between all disciplines and adhering to the project scope.

3.6.2 Contents

- A. Project drawings, 100 percent complete, with NAVFAC drawing numbers, and printed at half size
- B. When required and indicated in the project scope, the final Stormwater Management and Erosion/Sediment Control submissions ready for forwarding to the State shall be submitted four (4) weeks before the 100% submission.
- C. Project specifications, 100 percent complete and printed single-spaced, single sided. Provide all SPECSINTACT quality check reports
- D. Cost estimate based on detailed quantity takeoffs and unit material and labor prices using Success. Design contingencies are not to be used at this stage.
- E. Calculations for corrected final system component sizing/design as applicable to all design disciplines. The Mechanical calculations shall include updated heating and cooling load calculations showing derivation of the total supply, return, relief makeup, and outside air volumes including an allowance for the space pressurization.

The calculations shall also include psychometric charts for all air handling units and processes, equipment selections (including catalog cuts), pipe and duct sizing, static pressure and pump head calculations and other calculations as required to support the 100% design drawings.

- F. SPECSINTACT submittal register of submittals required of the Contractor by the project specifications, with those items noted which require approval by the Contracting Officer. Include "Stand Alone submittal register on disk."
- G. Final architectural finish boards(s), three (3) copies, showing samples of proposed interior and exterior building finishes as outlined in Appendix III.
- H. Rationale for the construction duration as stated in the project information sheet, clearly showing consideration of availability of materials, site conditions, seasonal conditions and length of construction for major systems. A simple time loaded bar chart is a suggested format
- I. Documentation that provides proof that the Quality Assurance/Quality Control Plan, as submitted and approved, has been accomplished (See Section 2.3.C)
- J. Geotechnical Certification (See Section 3.18.2)
- K. Automatic Temperature Controls: The written sequence of operation, and an I/O Point Schedule, for the Direct Digital System (DDC) automatic temperature control system shall be shown on the drawings (Not in the specifications). As far as possible, the sequence of operation shall be written alongside with the schematic control diagram.
- L. Handicapped Accessibility Certification sheet signed by responsible A-E representative.

3.6.3 Procedures

- A. The A-E shall deliver to the PL the documents indicated in the "Contract Submission Requirements List".
- B. The DrChecks Program will be used for all review comments. The A-E shall use the DrChecks Program for responding to all review comments.
- C. If the submission is determined to be inadequate, it will be returned for resubmission.

3.7 Final Submission (for DBB Projects)

A submission of the A-E's construction documents and a cost estimate that is complete and ready for advertising and bidding.

3.7.1 Objective

To allow the Government to successfully bid and award a construction contract for the work described in the "Statement of Architect/Engineer Services".

3.7.2 Contents

- A. Original Mylar project drawings, full size, signed by a legally responsible officer of the A-E firm, in accordance with Section 4.10 and with MIL HDBK 1006/1
- B. Copies of the project drawings, printed at half size
- C. The A-E shall provide the Government with two copies of the entire electronic drawing files. In general, files should be copied and remain in their natural format. Do not compress the files. Acceptable media types are CD-ROMs and 100MB Zip disks (Zip drive).
- D. A bond original of the completed project specifications, signed by the person who prepared of the specifications
- E. Copies of the project specifications. See Section 5 of this Guide
- F. Two electronic copies of SPECSINTACT reports and two sets of CD-ROM's containing project back-up files for SPECSINTACT, and two sets of CD-ROM's of the "Submittals Database" program. See Section 5 of this Guide.
- G. Final cost estimate. Submit three copies plus a copy of all estimate input on electronic media.
- H. Calculations, if any changes have been made since the 100% Submission.

3.7.3 Procedures

The A-E shall deliver to the PL the documents indicated in the "Contract Submission Requirements List".

3.8 Design-Build (DB) Submission

A submission of project documents considered complete and biddable for a design-build procurement. Also see DB definition in Section 1.3 and Programming Development and Concept Submission requirements in Section 3.2.

3.8.1 Objective

To provide the Government with documents that are technically complete as defined below, in proper format, biddable, adequate in documentation and format, coordinated between all disciplines, approved by all stakeholders, and adhering to the project scope.

3.8.2 Contents

3.8.2.1 Scope of Design Documentation

A Design-Build document is a performance specification with some exceptions, whose level of detail varies by the detail of the project's individual requirements from discipline to discipline, but whose overall scope is sufficiently defined to ensure a biddable document that satisfies the client and NAVFAC Washington requirements.

- A. Civil/Site work:** typically, the existing conditions will be documented to the fullest extent possible by a site survey delineating topography and all known utilities. Horizontal and vertical control shall be based on station monumentation to the extent that it is available. Test fits of the building and other required site features (i.e. parking, stand-off distances, landscaping, chiller yards, transformers, utilities, etc.) should be completed by A-E #1 to verify the designated site can accommodate all aspects of the scope.
- B. Architecture:** interior space requirements are documented by programming sessions and interviews conducted by A-E #1 (See Section 3.2). Individual room requirements (i.e. area, adjacencies, ceiling heights, etc.) are listed on room data sheets. Total building area and expected efficiency ratios are given on a summary table. All other architectural systems shall be defined but not necessarily detailed (i.e. roof, ceilings, and wall systems) unless predetermined by a Base Architecture Plan or other facility requirement.
- C. Structural/Foundations:** A-E# 1 shall provide all applicable criteria and codes for A-E# 2 to use for the design of the foundations and structural systems. If there are particular structural or foundation systems that should not be used, note it.
- D. Mechanical, Electrical, Plumbing and Fire Protection (MEP & FP):** The design should be sufficiently developed to define the facility's engineering systems serving the facility. The performance criteria, and the design parameters stipulated in the RFP, shall broadly define the engineering systems. The minimum cooling and heating requirements and the equipment capacities shall be specified in the RFP. The major electrical and mechanical equipment shall have specific sizes and be located on the drawings by single line diagrams. Fire protection equipment shall be indicated on single line riser diagrams. The backup data for the equipment shall be shown in the form of schematic and riser diagrams and the sequence of operation. The distribution systems and the locations of the terminal units shall not be shown but dictated by the performance criteria. Components and distribution systems may be sized where appropriate. The intent of the RFP can be enhanced through appropriate details, layouts, and graphics generally shown as 8 ½" x 11" plates or full size drawings. Overall, the level of detail and completion of the design for the MEP & FP systems shall be analogous to a 35% or design development submittal. The specific needs of the project may require certain systems (such as HVAC controls) to be taken to a higher level of design.
- E. Geotechnical:** Existing conditions will be documented to the fullest extent possible by a Geotechnical survey including necessary soil borings and/or test pits. The boring logs, report, and analysis will be included as an appendix to the specification however, any recommendations made by A-E #1 must be removed from the final specification.
- F. Environmental:** Existing conditions will be documented. The RFP should include a report on soils, lead paint, bird dropping, PCB, Mercury, etc.
- G. Fire Protection:** The RFP must include the latest version of NAVFAC Washington's RFP section D40. A copy must be obtained from NAVFAC Washington Fire Protection Engineering. The RFP shall be sufficiently developed to define the facility's engineering systems serving the facility. A-E #1 must provide a Fire Protection Basis of Design (BOD) report as outlined in Appendix II at the Draft submission. The BOD report must contain the following as a minimum; a Life Safety Analysis demonstrating that the minimum requirements of IBC and NFPA 101, Life Safety Code, have been satisfied, an IBC analysis indicating height and area requirements, separation distances, etc., a written description for all fire protection systems stating what is to be provided, how it is to function, and how it interacts with other systems in the building, a water test report and preliminary hydraulic calculations to determine if the available water supply can meet the demands of the proposed systems. For existing facilities, the BOD report must indicate the existing fire protection systems and

address if these systems can be modified to meet the new design requirements. The design must give specific instructions for expansion or replacement/upgrade of existing fire protection systems. For modifications/expansion of existing facilities, A-E #1 must perform an IBC analysis and ensure that the existing facility can be modified/expanded within the restrictions of IBC. Services of a registered Fire Protection Engineer must be acquired as required by section 2.11. Qualifications of the Fire Protection Engineer responsible for RFP development must be included at the Draft submission.

3.8.3 Draft Design Build Submission

The Government considers a completed DB package as biddable documents ready for advertisement.

3.8.3.1 Contents

- A. Project specifications (prescriptive and substantive). Note: Complete UFGS specifications shall be used for all Division 01000 and any environmental and/or elevator related requirements.
- B. Project drawings (if any)
- C. Cost estimate using Success cost estimating systems (refer to Section 6, “Cost Estimates”)
- D. SPECSINTACT format submittal status log

3.8.4 100% Final Design Build Submission

A submission of the DB documents and cost estimate that is reviewed and coordinated and is ready for advertising and bidding. This submission should contain all the requirements of Section 3.7 “Final Submission and the following:

3.8.4.1 Contents

- A. Project specifications
- B. Project drawings (if any)
- C. Cost estimate using SUCCESS Cost Estimating System and Cost Management System (refer to Section 6, “Cost Estimates”)
- D. Bid Schedule
- E. Electronic version (2 copies unless noted otherwise) of all items listed above (see Section 3.7.2 – C.)

3.9 HVAC System Study

This study is an investigation of appropriate HVAC System alternatives and energy conservation measures in accordance with ASHRAE/IESNA Standard 9.0 to determine what system(s) will be used in

the building/facility design. The goal is to provide mechanical systems that best satisfy the functional requirements of the facility. Functional requirements include, but are not limited to, delivery of appropriate indoor conditions, satisfying energy regulations, having an appropriate degree of maintainability and reliability, having compatibility with the architecture and finishes of the building and incorporate sustainable design concepts as appropriate. The Government prefers systems that are the least complex. Final selection of the mechanical system often involves consideration of subjective or intangible concerns. Therefore, the Government and Activity must be involved in the system selection process.

3.10 ASHRAE/IESNA Standard 90.1 Compliance Check

The ASHRAE/IESNA Standard 90.1 (STD 90.1) Compliance Check is the DOD's procedure for complying with federally mandated energy conservation requirements for federal buildings and facilities. If the ITG FY02-02 Interim Technical Guidance requires the provisions of STD 90.1 to apply to the building(s) or facility(s), then compliance with the requirements of the standard shall be documented using the forms shown in the 90.1 USER'S MANUAL, available from ASHRAE. The AE shall fill out the forms, and submit them for approval prior to finalizing the contract documents.

The AE shall identify each of the required Mandatory Provisions that apply to the design, and document and demonstrate compliance. Any deviation shall be clearly identified and the engineering and economic Life Cycle Cost Analysis supporting the deviation shall be provided. Life Cycle Cost Analysis shall be performed in accordance with NIST Handbook 135 "Life Cycle Cost Manual." When available the energy costs used in the analysis shall be the actual demand & usage costs charged to the activity by the utility company.

The AE shall identify which path to compliance is proposed: Prescriptive or Energy Cost Budget Method. The AE shall comply with the appropriate following paragraph:

Prescriptive Path. The Simplified Approach Option for HVAC Systems may be used where the specific system and facility design meets all of the relevant ASHRAE Standard 90.1 criteria. In all other cases the detailed requirements of the Prescriptive Path, as a minimum, shall be carefully followed. The final design package shall identify each of the features applicable to the facility and demonstrate compliance. Any deviations shall be clearly identified and the engineering and economic analysis supporting the deviation provided.

Energy Cost Budget Method. The final design shall include a full description of both the prototype or reference building and the proposed design with supporting engineering and economic analyses including the inputs, outputs and assumptions used in the computer simulations and programs.

3.11 Environmental Permits Report

Executive Order 12088, "Federal Compliance With Pollution Control Standards", as amended, requires Federal facilities to comply with applicable Federal, State, local and interstate pollution control standards. Accordingly, the A-E shall ensure that each project is evaluated for construction permit requirements in order to comply with all applicable regulations governing air quality, water quality, solid waste and hazardous waste. The information and data shall be provided by the A-E with the appropriate submittal as indicated on the "Contract Submission Requirements List".

3.11.1 Contents

- A. A report, prepared in spiral bound format, including the following:
1. Type of permit or variance required (construction, operation, etc.)
 2. Permitting authority (State, local, etc.)
 3. Procedure and time necessary to complete the permit application
 4. Fees required
 5. A statement that the project is covered by variances or that a permit is not required. If a variance is required, describe procedures on how it can be obtained. If a permit is not required, furnish reasons and supporting justification (cite State or local regulations).
 6. For each permit required, the A-E shall evaluate all State and/or local regulations to determine if monitoring devices are needed. Where required, monitoring devices shall be included in the project design.
- B. Necessary coordination shall be obtained and maintained with State and/or local permitting agencies as required. Discussions may include the scope and details of the project, provided there is no discussion of the fiscal year or dollar value amount involved.

3.11.2 Procedures

The report shall be in a separately spiral bound format and delivered to the PL, as indicated.

3.12 Fire Protection Water Flow Tests

The A-E shall perform a water flow test(s) on the existing water supply system(s) in order to determine the adequacy of the available water supply for the expected demands. Testing shall be performed in accordance with NFPA 13. The findings shall be submitted in a format similar to that of NFPA 13. Sketches shall be provided to show location of test hydrants, water distribution system, building location, etc. The Fire protection Water Flow Test Report shall be provided with the submittal as indicated on the "Contract Submission Requirements List".

3.13 Supplemental Interior Design

In addition to Interior Architectural Design referenced in Section 2.7, Supplemental Interior Design may be required. Supplemental Interior Design may consist of one or two elements as listed below and outlined in Appendix III.

3.13.1 Space Planning

As outlined in Appendix III, paragraph III.2.1.

3.13.2 Furniture Procurement Package

As outlined in Appendix III, paragraph III.2.2.

3.14 Moisture Analysis

Perform a job specific vapor transmission analysis based on project specific climate and specified wall components and materials, indicating that the moisture content of wall materials are within safe limits and that the surface relative humidity does not exceed 80% for extended periods of time.

Submit moisture content of all wall materials, temperatures and relative surface humidity's for the inside and outside of the building; a complete listing of the building components, their thickness, thermal resistance and permeance, as well as the building location and intended occupancy. If a mathematical model was used for the analysis, include the name of the model and the supplier/developer.

Condensation of water vapor within the wall assembly can lead to mold and performance problems. Condensation can cause damage to the wall structure such as rotting of wood studs, corrosion of metal framing, staining and discoloration of interior finishes, etc. Should analysis determine that the project design is potentially subject to condensation or mold problems, the installation of a vapor retarder, changing the insulation thickness, selecting a different insulation material or changing the wall design may be required.

For guidance on applicable moisture analysis methods see ASHRAE Handbook of Fundamentals, , Thermal and Moisture Control in Insulated Assemblies and Fundamentals, ASTM Standard C 755, Selection of Vapor Retarders for Thermal Insulations.

Computer based models, such as MOIST, developed by NIST, and WUFI ORNL/IBP are easy to use and are based on hourly weather data. The two programs can be downloaded from:

MOIST: <http://www.bfrl.nist.gov/863/moisthtml/>

WUFI ORNL/IBP: <http://www.ornl.gov/ORNL/BTC/moisture/>

Manual, steady state methods are useful for comparing the moisture related performance of two or more wall systems. Several methods are described in the ASHRAE Handbook of Fundamentals.

3.15 Model

A three dimensional representation of the project which provides the Government with a clear understanding of the project, its massing and its relationship to existing structures, form and scale. The model shall be constructed of a material that is suitable to withstand being relocated to various sites.

3.16 National Capital Planning Commission (NCPC), Commission of Fine Arts (CFA), & State Historic Preservation Office (SHPO) Submissions

3.16.1 Objective

To obtain the approval of all appropriate design review agencies by clearly demonstrating the sound planning and quality of the project. Work may be required to be performed by A-E #1 if the RFP design is developed that far or the requirements shall be included in the RFP to be performed by the Construction Contractor and A-E #2.

3.16.2 Contents of and Participation in Submissions

A project will often need to be submitted to the relevant State Historic Preservation Office (SHPO), the National Capital Planning Commission (NCPC), and/or the Commission of Fine Arts (CFA) for approval, depending upon jurisdiction. The PL will consult with the cognizant Planner at an early stage to determine the specific requirements and prospective timetable for the project review(s).

The typical contents of a submission package for the reviews are as follows:

For a selected menu of vicinity map, site plan, landscaping plan, floor plans, elevations, sections, roof plan, and storm water management plan provide

- A. Six sets of architectural drawings (half size acceptable).
- B. One set of presentation drawings mounted on boards and rendered in color.
- C. One set of page size drawings (8 ½ x 11" black & white).
- D. Photographs of the existing site conditions annotated on the reverse side to indicate content and location.
- E. Samples of building finishes, catalog cuts, and other material samples.
- F. A Project Data Report (in electronic medium). The PL will supply the outline for this item, typically one to three pages in length.

The A-E should anticipate a two to three month period for these reviews as well as the need to present larger projects at up to four public meetings. The Planner will, however, have the lead role in coordinating all reviews/presentations.

The A-E shall be responsible for making those modifications to the project design and supporting presentation materials requested by the review agency(ies), but only as authorized by the PL.

3.17 Post Construction Award Services (PCAS)

A-E shall assist the Government with the administration of the construction contract. The A-E contract will be modified to include the following A-E services:

- A. Review of the construction documents prepared by A-E#2.
- B. Review and approval of shop drawings, material samples and manufacturer certifications
- C. Consultation to the Government
- D. Travel to the construction site.

3.18 Rendering

The rendering requirements may be required by A-E #1, if requested and RFP work has developed sufficiently. Otherwise the A-E #1 shall include these requirements in the RFP for A-E #2 to perform. A professionally prepared color perspective rendering, a minimum of 30 inches wide in size. The height shall be appropriate for the composition. The artist rendering shall have a matting of 4 inches and the entire frame shall be a dimension of 30 (h) inches by 40 (w) inches. Sketches of the project shall be submitted for review, and for approval of one. Should none of the sketches be acceptable, additional sketches shall be required. Rendering media shall be watercolor, oil, acrylic, chalk, charcoal, pencil, India ink, or other medias that are approved by NAVFAC Washington in advance.

The A-E shall submit the original rendering and three full size copies; each shall be matted, covered with plexiglass and mounted in simple aluminum frames, complete with hanging hardware. The frame shall be made of a heavy gauge, so as not to deflect and shall have a vertical reinforcing wire attached to the top and bottom frame members. Six 8 inch by 10 inch color photographs, four 35mm slides, and a digitized copy of the rendering shall accompany the submission in a TIF file format, minimum 300dpi.

The mat of the rendering shall contain the following information across the bottom:

[Left Corner]	[Center]	[Right Corner]
Prepared for	Title of Project	A-E (& Contractor)
NAVFAC Washington	Location	Name
Naval Facilities Engineering		
Command		

3.18.1 Large Format Graphic

As part of the Rendering Submission, the A-E will provide to the PL one "Large Format Graphic" (i.e. 3M Scotchprint) with a gloss finish and adhesive backing. The maximum dimension will not exceed 24 inches in height, but will be as close in size to a maximum of 36 inches in width. This rendering will be used on the project's construction sign and therefore the durability must be such that it can withstand being exposed to the elements for an extended period of time.

The following information will be needed when ordering the Large Format Graphic:

Original Art:	Good Photo no larger than 8" x 10" Transparencies Reflective Art Computer Generated Image or Art (Mac/PC – PostScript File, Tiff, EPS) (Floppy, SyQuest, Photo CD, Zip)
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Information to Include:	Product you are requesting: 8640 3M Vinyl w/ 8910 3M Overlamine Output size Cropping Instructions (if necessary) Return of Art Instructions
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Contact the PL for possible

sources, if needed.

3.19 Soil Borings & Soils Analysis

The A-E shall conduct a geotechnical exploration and test program for the subject project in accordance with DM 7.01. In general, for a small building (less than 2,500 SF), a minimum of 2 soil borings is required. For larger buildings (greater than 2,500 SF), a minimum of 3 soil borings is required. For large multistory buildings, borings should be spaced at 75 feet on center in both directions. Borings shall extend 30 feet or more below the lowest foundation element, depending on the proposed foundation type and the anticipated geology.

3.19.1 Contents

The soil report shall be submitted in the following format:

- A. Executive summary of conclusions and recommendations
- B. Description of site and proposed construction
- C. Subsurface conditions and laboratory testing
- D. Geotechnical engineering analysis
- E. Calculations
- F. Soil boring logs
- G. Test results with graphs
- H. Location maps and site plans with soil boring locations, sufficiently detailed to adequately locate borings on station utility plans.

3.19.2 Procedures

The A-E shall submit a recommended geotechnical exploration and analysis program with detail fee breakdown, along with the A-E fee proposal. The exploration program shall include furnishing the data necessary to prepare storm water management plans or waiver applications when required for the project. If hazardous materials are suspected to be on the site, provide a recommended sampling and testing program to identify these materials and their respective location. At a minimum, the A-E shall be alert for any evidence of possible chemical contamination on the site and conduct field evaluation of each boring sample with equipment capable of detecting petroleum product contamination. For Air Force projects, a site specific environmental testing program will be developed with the Base. Discuss specific requirements during the pre-fee site visit. The A-E fee proposal shall also include project review by the geotechnical engineer providing the analysis and any recommendations for the project. At the 100% Submission, the Geotechnical Engineer shall provide a signed and sealed certification that the foundation design and construction documents comply with the intent of the recommendations in the Soils Report.

3.20 Topographic and Utility Survey

A survey showing all physical features, site conditions and utilities, above and below ground.

3.20.1 Objective

To provide the basis for depicting the existing site conditions on the project drawings.

3.20.2 Contents

- A. All surface and subsurface features, including roads, trees, rock outcrops, springs, walks, buildings, wetlands and abandoned footings, etc.
- B. All utilities, above and below ground, identify whether active or abandoned
- C. Existing contours
- D. Spot elevations (on critical features only)
- E. Datum and grid coordinate system used
- F. Bench marks and horizontal control points, with a minimum of two vertical and two horizontal control points established by the surveyor in accordance with supplemental guidance available from NAVFAC Washington PL via Code CH32. Points shall be located outside areas to be disturbed by the proposed construction.

3.20.3 Format

- A. The scale of the plot of the survey plans shall be such that all information is legible and clear on the construction documents when printed at half size. Survey plot scale shall be 1" = 20' or 1:200 (Metric), unless otherwise directed by PL at the direction of Code CH32, Bob Greco.
- B. Symbols and abbreviations shall comply with NAVFAC Washington's standards to the maximum extent possible. A copy of the standards will be made available upon request to the PL.
- C. The contour interval shall be chosen consistent with the existing topography and the nature of the construction being performed.
- D. The survey may be based on either a ground or aerial survey. If an aerial survey is chosen, the accuracy of that survey should be suitable for its intended purpose or, if necessary, supplemented with ground acquired information.
- E. The topographic survey and original survey notes and plots shall be delivered to the PL with the Final Submission, as indicated in the "Contract Submission Requirements List".

3.21 Value Engineering (VE)

3.21.1 General Requirements for Value Engineering Team Studies (VETS) under A-E Contract

- A.** Value Engineering Team Studies (VETS) shall be conducted on all projects with a construction cost of over \$3,000,000. For projects with a construction cost between \$1,000,000 and \$3,000,000, consider conducting a VETS.
- B.** All VETS shall be conducted in accordance with the principles of functional analysis.
- C.** The VE Team facilitator or coordinator shall be a Certified Value Specialist and the participants on the VE Team shall have successfully completed a 40-hour Module I Value Engineering Training Workshop approved by the Society of American Value Engineers (SAVE). The NAVFAC Washington Value Engineer, Heinz Trechsel, 202-685-3123, may waive the requirements for the Module I Workshop for the team members upon request.
- D.** As a rule, the VE Team shall include at the minimum the following disciplines: architecture, structural, civil, mechanical and electrical engineering. As appropriate, include additional disciplines, such as interior designers, environmental engineers, and fire protection engineers. The VE team must include a certified cost engineer.
- E.** Traditional VETS are conducted over a continuous five-day period. However, depending on the scope and complexity of the project, the duration of the study may be as short as, but not shorter than, three days.
- F.** At the least, the following persons shall be invited to participate in the VETS: User, ROICC, Public Works Office, Project Leader, and the NAVFAC Washington Value Engineer. Other persons may be invited as determined by the facilitator and the Project Leader. Provide at least two weeks notice.
- G.** The AE/VE contractor shall arrange for appropriate space for the study. At least one session shall be conducted near the proposed construction site to facilitate site visits by the team. The Station may be able to provide space for some or all VETS sessions.
- H.** At the beginning of the study, representatives of the A-E design team shall provide a kick-off presentation describing the current design solution. The design team shall be available by telephone throughout the study. Representatives of the A-E design team shall participate in the VE presentation and resolution meetings.
- I.** The VE team shall provide written documentation of the discussions, the results of the functional analysis, the alternative concepts reviewed, and the cost implications thereof. The VE report shall list the persons attending the VE sessions and document the VE qualifications of the facilitator.
- J.** Resolution Report: Within two weeks after conclusion of the VETS, the design team shall prepare and distribute to all persons attending the study a preliminary resolution report containing the A-E's recommendations for VE acceptance. Include in the report the cost estimating summary sheet, and a listing and summary of final actions on each Value Engineering Study Proposal (VESP): Line item description and potential savings; description and potential savings of modified VESPs; and a listing of all accepted VESPs. The Final Resolution Report shall be based on consensus of the design team and the user following an "on-board" final acceptance review of the A-E's recommendations. The Resolution Report is separate from and in addition to the VE Study Report prepared by the VE team.
- K.** For projects that are designed in metric, all Value Engineering activities must be conducted in metric and all resulting VE reports shall be in metric.

3.21.2 Value Engineering (VE) A-E Coordinating Services

For VETS conducted by an independent VE firm, the design A-E shall provide the following materials and services as appropriate:

- A. Latest project form DD1391 (or other project description).
- B. Seven sets each of half-size design drawings, cost estimates, and Basis of Design Report.
- C. Two copies of geotechnical reports, structural and HVAC calculations, economic analysis, energy conservation study, fire protection analysis, soil reports, hazardous material surveys, photographs, and any other pertinent reports and studies.
- D. Provide a kick-off presentation at the beginning of the study to describe the current design solution and be available by telephone during the VE study to provide input and to answer questions.
- E. Attend the presentation and the resolution meetings. The A-E shall provide written responses to each Value Engineering Study Proposal (VESP) to the VE Team.
- F. Resolution Report: Within two weeks after conclusion of the VETS, the design team shall prepare, and distribute to all persons attending the study a resolution report. Include in the report the cost estimating summary sheet, and a listing and summary of final actions on each Value Engineering Study Proposals (VESP): Line item description and potential savings; description and potential savings of modified VESPs, and a listing of all accepted VESPs. The Resolution Report is separate of and in addition to the VE Study Report prepared by the VE team and required under Section 3.20.1 Item I above.

3.22 Erosion/Sediment Control & NPDES Permitting

- A. The A-E shall prepare erosion/sediment control documents for review and approval. When the area of site disturbance is five acres or more, the A-E shall prepare the project design documents, incorporating all necessary design elements to comply with Federal and/or State National Pollution Discharge Elimination System (NPDES) general permit requirements for construction activity.
- B. A draft erosion/sediment control submission, as complete as possible in format and substance, shall be included in the 35% submission. This submission will include a thorough site description (including the general topographic character of the site, the existing land cover and its condition and proximity to nearby wetlands, streams, creeks, rivers, ponds, lakes, etc.), sketches showing existing and proposed drainage divides, and a preliminary erosion/sediment control plan, with sufficient detail to assess the designer's intent.
- C. A 100% erosion/sediment control submission, incorporating the 35% Submission comments and detailed design elements, shall be provided at the 60% or four (4) weeks before the 100% Submission.
- D. In the 100% erosion/sediment control submission the A-E shall provide contract documents, which are complete and present functional cost-effective erosion/sediment control measures, satisfying all submission requirements necessary for review and approval by the appropriate jurisdiction.

- E. The A-E shall deliver all submissions to NAVFAC Washington and not to the subject jurisdiction. The A-E shall obtain from the PL an erosion/sediment control/stormwater management handout containing up-to-date NAVFAC Washington standards and procedures.
- F. The A-E shall edit and modify NFGS 01575 to incorporate the appropriate erosion and sediment control measures. When the area of site disturbance is five acres or more, edit NFGS 01575 to require the prime contractor and applicable subcontractors to submit the appropriate Notice of Intent (NOI) and Notice of Termination (NOT) forms (as required for coverage under the applicable Federal and/or State NPDES general construction permit). When the area of site disturbance is five acres or more, the A-E shall also prepare an NOI Form for submission and signature by the government. Submit the NOI Form with the final ESC Submission.

3.23 Stormwater Management

- A. The A-E shall prepare stormwater management documents for review and approval by the appropriate jurisdiction, when necessitated by site disturbance in excess of that which would allow exemption.
- B. For projects requiring stormwater management, the A-E shall always address the requirements of the State and Navy criteria, and shall not base the design on county or local standards without explicit direction from NAVFAC Washington.
- C. The draft stormwater management submission shall be included in the 35% Submission. It shall contain all pertinent computations, site-specific information, upstream and downstream data, and resulting conclusions as necessary for a thorough assessment of the design intent.
- D. A 100% stormwater management submission, incorporating 35% Submission comments and detailed design elements, shall be provided at the 60% or four (4) weeks before the 100% Submission, if a 60% Submission is not required.
- E. In the 100% stormwater management submission, the A-E shall provide all necessary permit/waiver application forms. The 100% stormwater management report and the Civil portion of the contract documents shall be complete, and present a functional, cost-effective stormwater management design solution based on the stormwater management report. The 100% stormwater management submission shall satisfy all submission requirements necessary for review and approval by the appropriate jurisdiction.
- F. The A-E shall deliver all submissions to NAVFAC Washington and not to the subject jurisdiction. The A-E shall obtain from the project PL an erosion/sediment control/stormwater management handout containing up-to-date NAVFAC Washington standards and procedures.

3.24 Hazardous Material Removal Report

The A-E shall be required to investigate and identify the extent of all hazardous materials on the project and specify a Hazardous Material Abatement Plan.

Hazardous materials include, but are not limited to, the following list:

- Animal and bird droppings (in attics, cupolas, eaves, gables, and unused spaces)
- Asbestos (pipe and boiler insulation; thermal and sound insulation; floor tiles and adhesives; built-up roofs, roofing shingles, felts and flashing; electrical cable wrapping; firestopping; gaskets; ceiling tiles and adhesives; dust on ceiling tiles)
- Batteries (lead acid, lithium)
- Lead (paint, cable covering, flashing, piping, soldering)
- Misc. Chemicals contained in soil, tanks, fume hoods, ductwork, pipes, sumps, traps, paints, and film processing.
- Nuclear materials (medical equipment, luminous exit lights)
- ODS, Freon, Halon, Fire suppressants (air conditioning refrigerants, refrigerators, and freezers, spray cans)
- Paints (brushes, rollers, trays, rags, cans)
- Petroleum (In; soil, tanks, pipes, traps and sumps)
- PCB's (on concrete slabs, in soil, lighting ballasts, and transformers)
- Used Abrasives (sand blasting debris, paint removal, masonry restoration and cleaning)
- Mercury (thermostats, switches, and light bulbs)
- Petroleum, Heavy Metals in Soil (if required) and Chemicals

The A-E will be responsible for securing samples of any suspicious materials and for having the samples tested by a qualified testing laboratory. Samples may be required on suspect building materials, architectural finishes, equipment, piping, debris and dust. Sampling shall be done in accordance with EPA, State and local requirements, and performed by accredited personnel.

The A-E contractor shall submit to the PL a report containing the number of samples taken, the location of the samples taken, and the results of the testing for each sample.

A summary containing the locations, types and quantities shall be included in the construction documents.

3.24.1 Lead Based Paint

3.24.1.1 General Policy

All painted surfaces in facilities built prior to 1980 are assumed to contain lead. Therefore, it is not necessary to test for lead based paint during design. However, the construction contractor is required to conduct TCLP tests on representative composite samples of debris. Facilities built after 1980 are unlikely to contain lead based paint and no provisions regarding lead paint should be included in the contract documents. For further answers to questions about the above policy or its implementation please contact Code CH23, Heinz Trechsel, through the PL.

3.24.1.2 Buildings Built Before 1980

- A. If removal of paint is required, in order to refinish doors or windows in historic buildings or to comply with a risk assessment report in family related buildings, or where flaking paint needs to be removed prior to repainting, include section 13283, "Removal and Disposal of Lead

Containing Paint” and use the NAVFAC Washington regional guide specification NFGS-C-02220, “Site Demolition.” Indicate on the drawings the location and extent of deterioration of surfaces coated with lead based paint.

- B. If removal of paint is not required, or if the facility is to be demolished, do not include section 13283, but use the NAVFAC Washington Regional Guide Specification NFGS-C-02220, “Site Demolition” in the project specification. If Section 13283 is not used, discuss with the PL the need to add a summary statement in Section 01575, “Environmental Controls”.
- C. Where a Risk Assessment report on family related buildings requires the removal of soil, include an edited version of NFGS-13282, “Removal and Disposal of Materials Containing Lead” and indicate location, extent, and concentration of lead in soil on the drawings.

3.24.2 Asbestos Containing Material

The locations and types of asbestos containing materials shall be shown on the drawings and the quantities shall be listed in specification Section 13281. Asbestos survey report may be appended to the specifications but this does not relieve the A-E from showing the locations on the drawings and the quantities in the specifications. Where minimal amounts of asbestos containing material are to be removed, include the locations on the demolition drawings. Include dedicated asbestos removal drawings showing where significant amounts of asbestos containing material are to be removed.

3.25 Seismic Evaluation of Existing Buildings

Executive Order 12941, “Seismic Safety of Existing Federally Owned and Leased Buildings”, adopted minimum standards of seismic safety for use by Federal departments and agencies in assessing the seismic safety of their owned and leased buildings and in mitigating unacceptable seismic risks in those buildings. Executive Order 12941 specifies when mandatory seismic safety evaluations of existing buildings are required and mitigation of unacceptable seismic risk is needed.

3.25.1 Objective

To provide a structural evaluation of existing buildings as required by law to reduce the life-safety risk to occupants of Federal buildings and to the general public. The minimum performance objective deemed appropriate for Federal buildings in the long-term is Substantial Life-Safety. Substantial Life-Safety is defined as that performance objective where an earthquake may cause significant building damage that may not be repairable, though it is not expected to significantly jeopardize life from structural collapse, falling hazards, or blocked routes of entrance or egress. Compliance with FEMA 178 is assumed to achieve this level of performance.

3.25.2 Contents

A narrative report in spiral bound format, including the following:

- A. Executive Summary of the findings and recommendations.
- B. Description of the general building construction, the gravity-force-resisting system, the lateral-force-resisting system, and the foundation system.

- C. Discussion of which set(s) of evaluation statements were selected for building evaluation and the rationale for selection.
- D. Discussion of the rationale for assigning responses to each of the evaluation statements.
- E. Summarization of deficiencies, discussion of detailed evaluation of those deficiencies, and comments on the relative importance of the deficiencies.
- F. The final list of deficiencies that must be remedied in order to mitigate all substantial life-safety risks.
- G. A final overall evaluation of the building based on a review of the qualitative and quantitative results of the procedures and the list of deficiencies.
- H. The set(s) of evaluation statements, a synopsis of the investigation performed, and building analyses as required by non-compliant statements shall be included as appendices.

3.25.3 Procedures

The report shall be prepared in a separately spiral bound format and delivered to the PL, as indicated. All procedures and methods of evaluation shall be accomplished in accordance with FEMA 178 NEHRP Handbook for the Seismic Evaluation of Existing Buildings. The set(s) of evaluation statements may be reproduced from Appendix A or B of FEMA 178.

The evaluation process includes the following steps:

- A. A site visit and data collection,
- B. Selection of the appropriate set(s) of evaluation statements and review of the statements,
- C. Conduct follow-up field work,
- D. Performance of the detailed evaluation and/or analysis required for non-compliant evaluation statements,
- E. Final evaluation, and
- F. Preparation of the evaluation report.

SECTION FOUR:
PROJECT DRAWINGS

SECTION 4: PROJECT DRAWINGS

4.1 General

Project drawings for NAVFAC Washington shall be prepared in conformance with MIL HDBK 1006/1.

4.2 Preparation of Project Drawings

All the project drawings shall be prepared on “D” sized (22” x 34”) drawings. Copies of project drawings submitted for the various review phases shall be reduced to half size prints. Poor drafting techniques, resulting in illegible half size prints, will require resubmission. Other drawing sizes may be used with approval of the Product Line Coordinator for design, only.

Interior Architectural design drawings shall be submitted with project drawings. When Supplemental Interior Design is required, the furniture plan drawings shall also be submitted with the project drawings to ensure coordination with all other design disciplines. The furniture plan drawings shall be marked in bold letters “For Reference Only” in the lower right hand corner. See Appendix III for requirements.

All studies, calculations, and analyses submitted in bound form, shall be printed on 8 1/2 inches by 11 inches paper and shall be bound in spiral or three ring binders. Studies, calculations, and analyses may be bound in a single binder, if tab sheets separate them. Sheets shall be consecutively numbered.

4.3 Drawing Data

4.3.1 Definitive Designs

Definitive designs are drawings developed for buildings and other structures common to various Navy (including Marine Corps) components, e.g., child care centers, legal service offices, maintenance shops, etc., for which there is a repetitive need in future military construction programs.

4.3.2 Standard Designs

Standard designs, both mandatory and non-mandatory, are Government designs for which existing drawings and accompanying specifications are available. They consist of working drawings and specifications that are intended to become part of the construction contract without modifications made to them.

4.4 Project Drawing Numbers/Title Block

A block of NAVFAC drawing numbers will be issued, upon request by the A-E, when the total number of drawing sheets in the project documents has been established. The project title, construction contract number, project specification number, discipline sheet number, sheet number and total sheet count, plus the particular NAVFAC drawing number, must be placed on each drawing. Only the NAVFAC

Washington standard title block shall be used. Graphic scales shall also be provided for all scales whether English units or Metric units are used. Each drawing shall contain the following cautionary note: "CAUTION: IF SHEET IS LESS THAN 34" X 22" USE GRAPHIC SCALE."

4.5 Order of Project Drawings

For design build projects, these requirements must be described and included in the RFP. Drawings shall be arranged in the following order:

1. Plot plan, vicinity map, symbols, conventions and drawing index
2. Civil drawings, including topographic survey, survey control, demolition, grading, drainage, paving, water supply, sewage, stormwater management, erosion and sediment control and irrigation sprinkler system
3. Soil Boring Logs
4. Landscape drawings
5. Demolition and Hazardous Material Removal drawings
6. Architectural drawings
7. Interior Furniture Plan drawings (included for reference only)
8. Structural drawings
9. Mechanical drawings, including heating, ventilating and air conditioning, and controls
10. Interior plumbing, including sewage, domestic water, storm sewer, vacuum and compressed gasses
11. Electrical drawings
12. Fire protection.

4.6 Fire Protection Design

4.6.1 Design Drawings

Provide fire protection drawings as indicated in section 4.5. Fire protection drawings must be designed/reviewed by the Fire Protection Engineer required in section 2.11 and must contain the following information at a minimum. If the project is a design build project, these requirements must be included as the requirements of AE #2

35 % DESIGN COMPLETION

Drawings: Facility floor plans of each building level including the following information:

1. Building construction type classification in accordance with IBC.
2. Maximum gross building area allowed by IBC for construction type.
3. Actual gross building area per floor and total overall gross building area.
4. Fire resistance ratings of each floor/ceiling system and ceiling/roof system.
5. All interior fire and/or smoke rated partitions with ratings indicated for each type.
6. Required separation distances from existing and planned facilities and actual distances.

7. Building occupancy classification code and building occupant load in accordance with NFPA 101®, Life Safety Code.
8. Identify maximum permitted travel distance, egress capacity, common path of travel and dead end corridor length in accordance with NFPA 101®, Life Safety Code, and graphically demonstrate compliance with these criteria. Show the actual versus allowable.
9. Typical floor plan ([] [1:50] scale, minimum) indicating furnishings placement.
10. Typical reflected ceiling plan ([] [1:50] scale, minimum) indicating ceiling material, placement of lighting fixtures, ceiling fans, mechanical registers and access doors.
11. Door schedule showing fire doors.
12. Show the locations of the required fire hydrants, and indicate how they comply with the requirements below.
13. Location of Fire Extinguisher Cabinets.

100 % DESIGN COMPLETION

Drawings: Facility floor plans of each building level including the following information:

1. Building construction type classification in accordance with UBC.
2. Maximum gross building area allowed by UBC for construction type.
3. Actual gross building area per floor and total overall gross building area.
4. Fire resistance ratings of each floor/ceiling system and ceiling/roof system.
5. All interior fire and/or smoke rated partitions with ratings indicated for each type.
6. Required separation distances from existing and planned facilities and actual distances.
7. Building occupancy classification code and building occupant load in accordance with NFPA 101®, Life Safety Code.
8. Identify maximum permitted travel distance, egress capacity, common path of travel and dead end corridor length in accordance with NFPA 101®, Life Safety Code, and graphically demonstrate compliance with these criteria.
9. Typical module floor plan ([] [1:50] scale, minimum) indicating furnishings placement.
10. Typical module reflected ceiling plan ([] [1:50] scale, minimum) indicating ceiling material, placement of lighting fixtures, ceiling fans, mechanical registers and access doors.
11. Door schedule showing fire doors, fire rated frame, with hardware schedule. Door and frame details ([] [1:10] scale, minimum).
12. Reflected ceiling plans ([] [1:100] scale, minimum).
13. Provide drawings showing the extent of the spray-applied fireproofing on the structural members.
14. Provide completed shop drawings for all systems stated below, minimum size [24 inch x 36 inch] [600 mm x 900 mm], for each system, all in accordance with Section 00911 and by the appropriate sections.
15. Equipment installation and/or connection details where required for proper installation.
16. Locations of Fire Extinguisher Cabinets

4.6.2 Sprinkler System Design

It is NAVFAC policy that sprinkler systems be incorporated into a construction contract by performance specification only. Accordingly, sprinklers and sprinkler branch lines are not shown on the project drawings. An exception to this is when, for Historic Preservation or architectural importance, detailed information must be provided to protect the historic fabric or integrity of the space. Sprinkler risers, control valves, supervisory switches, and the inspector's test connection, etc., must be indicated at all times. When a new sprinkler system, or portion thereof, is to be connected to existing water mains, the A-E shall conduct water flow tests near the point of connection and provide hydraulic calculations showing that the new system will be adequately supplied. Indicate the location of the specified water supply on the drawings (i.e., base of riser, point of connection to the water distribution system, point of connection to the sprinkler main, etc.).

4.6.3 Fire Alarm System Design

It is NAVFAC Washington policy that fire alarm systems be incorporated into a construction contract by performance specification only. Accordingly, smoke detectors, heat detectors, manual pull stations, and audio/visual appliances will not be shown on project drawings to indicate actual locations, but can be shown in areas to be provided with that type of device. A note shall be provided stating that the devices are shown for the intent of protection, while the required quantity and location is the responsibility of the contractor. The fire alarm control panel, remote annunciators, power extender panels, etc., locations must be shown on the drawings.

4.7 Soil Boring Logs

Soil boring logs showing the soil conditions shall be indicated on the drawings, together with a reference to the source of information, i.e., title and date of the soils report and the name of the soil testing firm. The plan locations of the soil borings shall be shown on appropriate size scale drawings, preferably on the finish grading plans, so that relationships to existing and finish grades can be readily ascertained. When logs are not drawn on the same sheet as the large scale location plans or when features of a large project, such as a sewage project, are widely separated and the number of logs exceeds five, a separate small scale location plan shall accompany the logs. Logs shall be drawn to an appropriate engineering scale to show the depth of the boring below ground, with the corresponding elevation of the existing ground, related to project data, indicated at the top of the boring.

4.8 Quality Assurance

Project drawings shall be final and complete, with all elements thoroughly checked and coordinated with each other, the project specifications and the various engineering studies. It is essential that the project drawings are accurate and explicit and that they provide an equitable basis for bids. All elements of the work shall be properly coordinated to ensure that there are no conflicts between or among the various disciplines or between the drawings and specs. Particular emphasis shall be placed on this coordination when certain elements of the design are subcontracted by the A-E. The project drawings shall be checked for conformance with all applicable criteria, adequate design, and accuracy of details and dimensions. Text shall be checked for spelling, punctuation and grammar. Sheets shall be crosschecked against each other for similarity of dimensions and details.

The project specifications shall be reviewed immediately prior to the submittal of the project drawings and specifications to ensure that all changes on the project drawings have been reflected in the project specifications. The A-E shall ensure that conflicts do not exist between drawings and specifications.

4.9 Revisions to Project Drawings

A revision is a change on the project drawings after the project has been released for advertisement but prior to the completion of the A-E contract. Revisions to project drawings are usually done as part of an amendment or a construction change order. Revisions to the drawings shall not be made without prior approval of the PL. Revisions shall be made by crossing out, by adding new or revised information on the signed reproducible, or by redrawing. Erasures shall not be made to the drawings.

A revision symbol (a letter and number within a triangle) shall be used to identify a revision on the project drawing. In addition, revisions shall be logged in the revision block in the upper right hand corner of the project drawing by placing a letter in the symbol portion of the block, followed by the item description, the date of the revision, and the initials of the approving Government official. A corresponding revision symbol shall be placed near the affected area on the project drawing. Revision "A" shall indicate the first revision to a drawing; Revision "B", the second, etc. The letters O, X, and I shall not be used. A single revision change may include several different items. Each item shall be identified with the same revision letter and shall include a number to distinguish it from other items within the revision, e.g., A1, A2, etc. The appropriate number or group of numbers shall precede each item description in the description column of the revision block. The revised area on the project drawing shall be encircled with a bold cloud to make the revised area conspicuous. If the revision is made to a signed reproducible, the cloud shall be applied to the back of the drawing with a soft black pencil. The revision symbol shall be located as near as possible to the notes, lines, views or dimensions that have been changed to keep the number of symbols to a minimum. To prevent overcrowding, where there are many changes in one area of a drawing, a single revision symbol may be used to identify the change if sufficient data are included in the revision block. If the revision accompanies an amendment or change order request, the amendment or change order number shall be indicated in the revision block along with a description of the change. New project drawings accompanying an amendment or a change order request shall include the following statement in the revision block: "This drawing accompanies amendment number ." or "This drawing accompanies Change Order number ."

4.10 Signatures on Project Drawings

Each project drawing shall bear the surname of all individuals directly involved in its preparation. The designer and reviewer shall not be the same person. The engineer or architect signing the project drawings shall be a professional engineer (P.E.) or a registered architect (R.A.) in the State of record of the A-E or the State of the proposed construction project. In addition, each project drawing, including electronic version, shall be signed by a corporate member of the prime A-E in the title block marked "submitted by". Each project drawing, including electronic version, must be stamped with the appropriate registration seal and original signature of the architect/engineer for that discipline, with the seal placed next to the title block.

4.11 Preparation of Record Drawings

A record of changes made during construction will be made by the Construction Contractor on a copy of the project drawings. At the conclusion of the construction and when required by a change order to the A-E contract, the A-E shall correct the original project drawings to show the "recording drawing" changes indicated on the marked up prints. Deletions or superseded portions of the project drawings shall be erased. However, optional methods of construction not used shall be crossed out and noted "NOT USED". These record drawings shall show only the actual construction. The final product will be an update of the electronic files that will then be used to produce a set of record drawings. Each drawing should have a dated note that reads as follows:

RECORD DRAWING (Dated)
This sheet supercedes the original bid drawing.

Deliverables shall include:

1. Two copies of the electronic files on CD-ROM or 100MB Zip disk (Zip drive)
2. One copy of 35 mm microfilm on aperture cards
3. One complete set of the "Record Drawings" on Mylar
4. The original bid drawings on Mylar.

If the project is a design build project, the AE#2 shall include the above requirement in the RFP for the AE#2 to follow.

4.12 Half-size Drawings & Lettering Size

It is NAVFAC Washington policy to issue half size drawings (15 inch by 22 inch) to prospective bidders and for review during the design process. The quality and size of lettering must be such as to ensure accurate bidding. Lettering is to be sized appropriately so as to be legible at half-size. If the project drawings are illegible at half-size and fail to meet this minimum requirement, the project drawings will be returned to the A-E for resubmission.

SECTION FIVE:
PROJECT SPECIFICATIONS

SECTION 5: PROJECT SPECIFICATIONS

5.1 General

For all design-bid-build projects designed for NAVFAC Washington, the specifications shall be prepared using SPECSINTACT. For all Design-Build projects, the Request for proposals (RFP) prepared for NAVFAC Washington shall use SPECSINTACT for Part 3, General Requirements (Division 1), and for Part 4, Prescriptive Technical Specifications (Technical Specifications for Hazardous Materials and for Conveying equipment). For Part 4, use NAVFAC prepared Performance Technical Specifications.

SPECSINTACT is a computer-based specification production system used by the Navy, Army, and NASA. The system contains the Guide specifications to be used in SPECSINTACT, the project specification is treated as a complete product, allowing for numerous quality assurance features to prevent or detect common problems and to allow functions such as the automated preparation of submittal registers and other reports which extract portions of each specification section file. The use of SPECSINTACT and UFGS' in all Specifications and Requests for Proposals as described above is mandatory. For all Specifications and RFP's, the title sheet template appended to UFGS-01110 shall be used. Do not use proprietary or decorative cover sheets for either specifications or RFP's. Such sheets will be removed prior to publication.

5.2 SpecsIntact Training & Help Desk

A-E's that are not familiar with SPECSINTACT are strongly recommended to have at least one person attend a three-day course in the use of SPECSINTACT. Several training sources can be found under "SPECSINTACT" on the Internet. SPECSINTACT also maintains a help desk at 321-867-8800. This help desk will answer all questions the specifications writer may have. However, they are not equipped to provide on-line training and should not be considered as an alternative to SPECSINTACT training as recommended above.

5.3 SpecsIntact & Guide Specifications

As a rule, use UFGS Guide Specifications. UFGS' supercede the former separate Navy (NFGS) and Army (CEGS) Guide Specifications. Until the Guide Specifications of all the different Services are harmonized and converted to true Unified Guide Specifications, some UFGS carry a suffix "N" for Navy or "A" for Army. As the Navy and Army versions are converted to true Unified GS', the "N" and "A" versions will disappear. Use UFGS' (no suffix) and the UFGS "N" versions for NAVFAC constructions for all design-bid-build projects and for the prescriptive sections in RFP's for design-build. In addition to UFGS, a limited number of Regional Guide Specifications for use in designs under individual NAVFAC component exist. NAVFAC Regional Guide Specifications are identified as NFGS-X-YYYYY, where "X" stands for the region (e.g. "C" for NAVFAC Washington) and XXXXX for the five digits section number. Regional Guide Specifications are listed in the SPECSINTACT Masters under the acronym of the appropriate EFA-EFD. They are also provided (as PDF files) on CCB under Library/NAVFAC Specifications/Regional Specifications. UFGS' and Regional NFGS cover nearly all needed building components. As a rule, where a NAVFAC Washington Regional specification exists, use that version in lieu of the corresponding UFGS, except for Section 02220. Use NAVFAC Washington Regional Section UFGS-C-02220N only for projects that include demolition activities of

structures built prior to 1980. Only where a Navy version of a UFGS section for a product does not exist, use a comparable Army, NASA, VA, or other SPECSINTACT section. If no SPECSINTACT Guide Specification exists, the A-E will be required to prepare a Project-Unique Section as explained in paragraph 5.5. The use of such Project Unique Sections should be very limited and is only allowable if the NAVFAC Washington Specification Coordinator, Heinz Trechsel, 202-685-3123, authorizes its use in writing. Requests for approvals shall be submitted at 35% completion. Instead of preparing project unique sections, include unique project requirements in appropriate UFGS' where possible. No Project Unique Sections will be allowed in Division 1.

5.4 SpecsIntact on CCB

SPECSINTACT and the Unified Guide Specifications are available on CD-ROM. They are a part of the Construction Criteria Base (CCB), a CD-ROM library of construction information collected and distributed by the National Institute for Building Sciences (NIBS).

<https://www.ccb.org/ccbsubscribe/Subsmain.asp> SPECSINTACT and CCB require at least an Intel 486/66 computer capable of running Windows 95, 98, NT, or Windows 2000. Contact NIBS at 202-289-7800 for the latest hardware requirements as they change frequently.

5.5 Project Unique Sections

Where a UFGS, Navy, Army or NASA SPECSINTACT section or a Regional UFGS does not exist for a building product or component, guide specifications of other Government departments or private organizations such as MASTERSPEC or SPEC-TEXT may be used if so authorized. However, such "other" specifications sections must be built in SPECSINTACT (using SPECSINTACT Templates) or converted into SPECSINTACT format. When writing such sections, follow the general language of the UFGS guide specifications. The reason all Project-Unique Section need to be in SPECSINTACT format is so that the various quality control checks of SPECSINTACT can be applied to the entire specification and that the Submittal Register can be prepared through SPECSINTACT.

SPECSINTACT contains a spell checker, which recognizes many engineering and construction terms in the guide specifications. However, the A-E is expected to properly proofread the specification for spelling as well as grammatical errors and technical soundness. The SPECSINTACT documentation provides further information on producing unique sections using templates.

5.6 Outline Specifications

The first specification submittal during the design development phase (normally at 35%) is an outline specification. The purpose of the Outline is to allow the reviewers to verify that all appropriate sections are selected and to understand major requirements that will be part of the specifications. The Outline lists the Sections that are intended to be included in the final specification and the date of issue of the guide specification to be used. However, a simple table of contents of the project specifications does not qualify as an outline and will not be accepted as such. To serve its purpose, the outline will have to include the title and scope of the section, as well as information on major issues within the section. For example, in Section 08520 "Aluminum Windows, the operating type (sliding, awning, etc.) should also be included. The issue date of the guide specifications used need not be changed after approval of the outline at 35%.

5.6.1 SpecsIntact Outline

SPECSINTACT can print a table of content and a brief Scope statement after the sections are chosen. In SPECSINTACT, highlight the job and under “File” go to “Process and Print.” Select “Reports,” and under “Project Table of Contents” select “Include with Scope.” Click on Process Only. You will now see a project table of contents, which lists all the sections selected, and a brief scope statement for each section. Edit the scope statement as appropriate and add pertinent information so that the outline serves its purpose as indicated above.

5.7 Draft Specification (60%) Submittals

5.7.1 Content of the Review Package

1. Include an update of the Outline Specification submitted at 35%.
2. At least 75-80% of sections shall be completed or nearly so. It is recommended that the sections be “redlined” to show the changes made by the editor to the guide specifications.

5.8 100% & Final Project Specification Submittals

5.8.1 Content of the Review Package

1. **SPECIFICATION:** Print the specification using the SPECSINTACT program. Do NOT use custom fonts or bold print, but use the standard SPECSINTACT print options. Submit the specification for review in bound form, printed either on one or both sides. The final “bond copy” or “camera ready copy” shall be unbound and printed on one side only. Package the “bond copy” in a sturdy envelope or box to prevent damage. Include the cover sheet, table of contents, submittals register, and any appendices with the “bond copy”.
2. **QA REPORTS:** SPECSINTACT has the ability to make many quality checks on the specification. These include checking for bracketed choices which remain unresolved, sections that are referred to in the text but missing from the specification, removing unused reference documents, and others. Conduct these tests and reports during the editing process. These reports will locate problem areas in the specification, which need the attention of the A-E. Do not send NAVFAC Washington a long list of these errors, but correct the errors prior to submission and re-run the tests until the output shows that there are no errors. Submit the ‘no errors’ report with the specification. If errors cannot be resolved, contact the SPECSINTACT Help Desk at 321-867-8800 or the NAVFAC Washington Specifications Coordinator, Heinz Trechsel, at 202-685-3123
3. **SUBMITTAL REGISTER:** The SPECSINTACT program allows for the production of a submittal register to be printed along with the project specification. Include this register in the specification following the Submittal Procedures section (01330). Note that if the specifications package includes non-SPECSINTACT sections, the Submittal register would need to be prepared and checked by hand. It is for this reason that all sections need

to be written, or converted into, SPECSINTACT.

- 4. STAND ALONE SUBMITTAL REGISTER:** In addition to the printed Submittals Register, the A-E shall include with the Final Submission two disk copies of the Stand Alone Submittal Register. Download the program and the instructions for the program from:
- <http://si.ksc.nasa.gov/specsintact/software/downloads/sidown/SASR.zip>
 - <http://si.ksc.nasa.gov/specsintact/software/downloads/sidown/SASRInstructions.pdf>

5.8.2 Format of the 100% and Final Specification

- A. SPECIFICATION COVER SHEET:** The Master Document for this page is found in Section 01110, Summary of Work. On the cover sheet, please type the name of the submitting AE Officer under the “Submitted” line, and under the “Approved” line, type “Heinz R. Trechsel, R.A.”
- B. MULTIPLE VOLUMES:** Specifications shall be printed single-sided. When printed for bidding purposes, the specification is printed two-sided to reduce bulk. Nevertheless, the size may become unwieldy unless the specification is printed in multiple volumes. To separate the specification into volumes, produce identical cover pages with the addition of the words “VOLUME I of II,” “VOLUME II of II,” etc. below the project location line to indicate the Volume number, total number of volumes. Also indicate the section numbers included (Section xxxxx to Section yyyyy) in each volume.
- C. SEPARATOR SHEETS:** Do not include separator sheets between sections of the specifications.
- D. SPECIFICATION TABLE OF CONTENTS:** The Table of Contents is produced automatically by SPECSINTACT from the Print Menus.
- E. DRAWING LIST:** The Drawing List is found in Section 00102, List of Drawings. This is the only document in the “00 Documents Series” which is produced by the A-E. Include this section when submitting the specification for review and with the final submittal. Edit this section regarding Reference Drawings and Subsurface Data. Keep this section separate from the rest of the specification when submitting. Do not include this section in the Specification Table of Contents.
- F. DISK SUBMITTALS:** Submit electronic files on CD-ROM. Attach labels to each disk identifying the project by title, Contract Number, Specification Number, and disk content and date. Use separate disks for the Specifications and for the Submittals Database. Make all disks using the SPECSINTACT Back-up program; do not use DOS or any other method. Note: To submit SPECSINTACT specifications on CD-ROM, it is necessary to first back-up the entire job onto the hard drive and then copying all SPECSINTACT files relating to the job

(not just the individual sections) onto the CD-ROM. Include two separate disks of the Stand Alone Submittal Register as described above.

- G. PROJECT INFORMATION FORM:** The Project Information Form is a document used throughout the design process to share information about the project. The Form is to be completed and returned at the 100% and Final Submissions. Instructions for preparing the form are available from the Project Leader.

5.9 Design-Build Request for Proposal (RFP)

5.9.1 Overview

The structure for the Design-Build Request for Proposal has changed. The new structure is detailed on the web site <http://www.wbdg.org/ndbm>. That web site is intended to (1) familiarize those new to the design-build process with the format and typical RFP specification sections, (2) provide the Guide Performance Technical Specifications, and (3) allow those preparing a design-build RFP to download these electronic documents. The site is organized using tabs for the major sections and parts as outlined above and provides additional information useful for the preparer of the RFP. In the text below, the preparer of the RFP is referred to as the Government Design Agent and the Designer of Record is the Contractor's Design Agent.

The new structure consists of six Parts:

PART ONE	PROPOSAL FORMS AND DOCUMENTS
PART TWO	GENERAL REQUIREMENTS
PART THREE	PROJECT PROGRAM
PART FOUR	PERFORMANCE TECHNICAL SPECIFICATIONS (PTS)
PART FIVE	PRESCRIPTIVE SPECIFICATIONS
PART SIX	ATTACHMENTS

PART ONE consists of proposal forms and documents prepared for the most part by the Contracting Officer using the standard design-build template in the Standard Procurement System and included in the RFP, except for the Bid Schedule and the List of Drawings, which have to be provided by the Government Design Agent.

PART TWO are the General Requirements. These are the applicable Division 1 specifications based on the Unified Facilities Guide Specifications (UFGS) in SPECSINTACT. The Government Design Agent prepares the General Requirements in the same manner as for design-bid-build projects. These Divisions 1 specifications will essentially be incorporated verbatim into the project specifications to be prepared by the Contractor's design agent.

PART THREE is the Project Program. It includes the documentation of the operational, functional, and space planning requirements from an architectural and engineering perspective. The Project Program is comprised of six chapters. Specific editorial instructions are included in Criteria Notes that are identified as "Hidden Text" in the Word documents. These "Criteria Notes" are helpful to the RFP editor.

PART FOUR are the Performance Technical Specifications (PTS) in Unifomat II/WBS building element classification system that are required by the Project Program. The performance technical sections tie directly to the numbering system used in the Project Program. Guidance for preparing these performance

Specifications are given in the WBDG Web site. Within the PTS, the information on particular subsystems is referenced through Level Three and Level Four of the Unifomat II / WBS. The PTS are provided as Word documents and are to be edited by the Government design agent to reflect the characteristics of a particular project. Specific editorial instructions are included in Criteria Notes that are identified as “Hidden Text” in the Word documents.

PART FIVE are applicable Prescriptive Specifications for items that are of a critical nature, such as for the treatment of hazardous materials (Asbestos, Lead and Lead Paint, PCB, etc.) and elevators. The Prescriptive Specifications are prepared using the appropriate UFGS Sections and edited in SPECSINTACT. Prescriptive specifications should only be used when performance technical specifications will not meet particular project requirements.

PART SIX are Attachments and additional information that the RFP preparer feels would be useful to the contractor submitting a proposal for the work. Examples include record drawings for a current facility, soil boring logs, environmental impact reports, and pictures. Part Six is organized into general categories:

- Drawings: Record drawings, Planning drawings, Style drawings and Clear zone drawings;
- Reports: Soil Boring Logs, Geotechnical Reports, Environmental Hazards, etc.
- Pictures: General Site Photographs, Photographs of environs, adjacent structures; Photographs of specific site problems (e.g., significant storm water erosion); Photographs of the operations at an existing facility;
- References: Weapon System Developer Contacts (if liaison is required), Websites, User Personnel Lists

5.9.2 Contents of the RFP Review Package

1. Include all Division One sections (based on UFGS’) in Part 2 as applicable.
2. Most technical sections from Division 2 through 16 are not provided since performance specifications are used. Exceptions are elevators and hazardous materials for which UFGS-based specifications are included in Part 5. The performance specifications consist of:
 - Industry reference standards to be followed
 - Design/performance requirements
 - Submittals and their requirements during design
 - Required testing and verification
 - Submittals during construction
3. Attachments are included as pertaining to the necessities of the project
4. A typical RFP table of contents includes/but is not limited to:

PART ONE - PROPOSAL DOCUMENTS

SECTION 00100	PROPOSAL SOLICITATION (FORM 1422)*
SECTION 00201	INSTRUCTION TO PROPOSERS *
SECTION 00202	EVALUATION CRITERIA*
SECTION 00452	REPRESENTATIONS FOR CONTRACTING BY NEGOTIATIONS *

PART TWO - CONTRACT FORMS AND CONDITIONS

SECTION 00600	BONDS AND CERTIFICATES *
SECTION 00720	CONTRACT CLAUSES *
SECTION 00721	CONTRACT CLAUSES *
SECTION 00830	DAVIS-BACON WAGE DETERMINATIONS *

PART THREE - GENERAL REQUIREMENTS (as needed)

DIVISION 01 – GENERAL REQUIREMENTS (BASED ON UFGS’)

SECTION 01110	SUMMARY OF WORK
SECTION 01140	WORK RESTRICTIONS
SECTION 01200	PRICE AND PAYMENT PROCEDURES
SECTION 01310	ADMINISTRATIVE REQUIREMENTS
SECTION 01321	CONSTRUCTION PROGRESS DOCUMENTATION
SECTION 01330	SUBMITTAL PROCEDURES
SECTION 01420	REFERENCES
SECTION 01450	QUALITY CONTROL
SECTION 01500	TEMPORARY FACILITIES AND CONTROLS
SECTION 01525	SAFETY REQUIREMENTS
SECTION 01572	WASTE MANAGEMENT
SECTION 01575	TEMPORARY ENVIRONMENTAL CONTROLS
SECTION 01580	PROJECT IDENTIFICATION
SECTION 01770	CLOSEOUT PROCEDURES
SECTION 01781	OPERATION AND MAINTENANCE DATA
SECTION 01782	OMSI MANUAL FOR DESIGN-BUILD

PART FOUR - PERFORMANCE TECHNICAL SPECIFICATIONS

(DOWNLOAD FROM THE WBDG (as needed))

SECTION A10	FOUNDATIONS
SECTION B10	SUPERSTRUCTURE
SECTION B20	EXTERIOR CLOSURE
SECTION B30	ROOFING
SECTION C10	INTERIOR CONSTRUCTION
SECTION C30	INTERIOR FINISHES
SECTION D20	PLUMBING
SECTION D30	HEATING, VENTILATING, AND AIR CONDITIONING
SECTION D40	FIRE PROTECTION SYSTEMS
SECTION D50	ELECTRICAL SYSTEMS
SECTION E20	FURNISHINGS
SECTION G10	SITE PREPARATION
SECTION G20	SITE IMPROVEMENTS
SECTION G30	SITE PLUMBING UTILITIES

PART FIVE - PRESCRIPTIVE TECHNICAL SPECIFICATIONS (as needed)

SECTION 14240	ELEVATORS
SECTION 02115	CONTAMINATED SOIL
SECTION 02220	SITE DEMOLITION
SECTION 13281	ASBESTOS
SECTION 13283	LEAD PAINT

PART SIX - ATTACHMENTS (as needed)

ENVIRONMENTAL SURVEY DATA
TOPOGRAPHIC SURVEY

SOIL BORINGS (DO NOT INCLUDE RECOMMENDATIONS)
AS-BUILT DRAWINGS
PHOTOGRAPHS OF EXISTING BUILDING(S)/CONDITIONS
SUPPLEMENTAL SHEETS SHOWING APPLICABLE UTILITY HOOKUPS

5.10 Proprietary or Restrictive Requirement

Do not use Proprietary or Restrictive Requirements unless it is established by NAVFAC Washington conclusively that no substitute serves the purpose. When a proprietary product is proposed for use, it shall be fully justified in writing and presented to the Project Leader no later than at the 35% FOR DBB or Draft Submission for DB Submissions. Use the “Or Equal” specifications below if only three manufacturers make the product.

5.10.1 “Or Equal” Conditions

Specifying products by the use of commercial trade names is permitted only with a justification and under the following conditions:

1. No Government or Industry document, standard, or specification exists for the product.
2. The product is only a minor part of the construction.
3. The product cannot be described because of its technically involved construction or composition.
4. A minimum of three manufacturers is specified.

Use the following wording:

“[Product or system] shall be [model, make, etc.], as manufactured by [name and address]; or [model, make, etc.], as manufactured by [name and address]; or [model, make, etc.] as manufactured by [name and address] or equal.”

Following this, the essential features of the product or system shall be set forth in sufficient detail to establish the basis upon which the equality of non-listed products will be determined.

5.10.2 Finishes

When specifying building finishes, i.e., carpet, resilient tile flooring, etc., keep specifications generic. Do not list manufacturers names in the specification, rather provide a color key (listing of manufacturers) together with the finish schedule in the drawings. The following disclaimer shall be added:

“Patterns and colors listed by the manufacturer’s name are for identification only. The listing is not intended to limit selection of similar finish colors and patterns from other manufacturers.”

5.11 Division One Sections

Division One sections contain mainly administrative requirements; therefore the Division One of most projects is similar

5.11.1 The following sections of Division One are required in most projects:

01110	SUMMARY OF WORK
01140	WORK RESTRICTIONS
01150	SPECIAL PROJECT PROCEDURES
01200	PRICE AND PAYMENT PROCEDURES
01310	ADMINISTRATIVE PROCEDURES
01320	CONSTRUCTION PROJECT DOCUMENTATION
or	
01321	NETWORK ANALYSIS SCHEDULES
01322	WEB BASED CONSTRUCTION MANAGEMENT (WEBCM)
01330	SUBMITTAL PROCEDURES
01450	QUALITY CONTROL
01500	TEMPORARY FACILITIES AND CONTROLS
01525	SAFETY REQUIREMENTS
01575	TEMPORARY ENVIRONMENTAL CONTROLS
01770	CLOSEOUT PROCEDURES

5.11.2 There are other sections in Division One which may be required depending on project conditions, including:

01150	SPECIAL PROJECT PROCEDURES
01572	CONSTRUCTIONS AND DEMOLITION WASTE MANAGEMENT
01580	PROJECT IDENTIFICATION (includes plates)
01781	OPERATION AND MAINTENANCE DATA

There are notes in each guide specification to help in editing each section. For additional help contact the NAVFAC Washington Specifications Coordinator, Heinz Trechsel, 202-685-3123. or the SPECIFICATIONS HELP DESK at 321-867-8800.

5.11.3 Some Division One sections have additional points of contact for help in editing. The following are commonly needed on a project-by-project basis:

- A. **01525 SAFETY REQUIREMENTS:** When editing Section 01525, “Safety Requirements”, seek advice from the NAVFAC Construction Safety Coordinator, Larry Carpenter, 202-685-8188 regarding the need for special project safety requirements.

- B. **01575 TEMPORARY ENVIRONMENTAL CONTROLS / INTERFACE WITH STORM WATER MANAGEMENT AND E/S:** When editing Section 01575, Temporary Environmental Controls consult with the NAVFAC Washington Stormwater Management and Erosion and Sediment Control Coordinator, John McFarlane, 202-685-3135 regarding Stormwater Management and Erosion and Sediment Control. See also paragraph 3.21 of this guide for editing instructions.

5.12 WordSpec

Wordspec is an experimental program that converts SPECSINTACT files to Word for Windows and vice versa, allowing section editing to be done in Word. This program is found on the CCB disk. Note that Wordspec does allow the various quality control checks and other features which make SPECSINTACT so useful. Do not submit project specifications or RFP's in Wordspec.

5.13 Specification Changes

Corrections to specifications and drawings, once the project has been released for advertising, are made using Amendments and Change Orders. Instructions for preparing amendments are available from the PL.

5.14 Air Force Projects

There are certain requirements that are unique to Air Force projects. These are generally noted within the guide specifications with instructions. In some cases the A-E will be given information to prepare a separate specification section using the SPECSINTACT templates.

5.15 Technical Sections

For assistance in editing the technical sections in Division 2 through 16 for the project, contact the appropriate discipline. Include plates required by technical sections immediately following the section. On the last page of the last technical section, include the words "--End of Specification--" at the bottom of the page.

5.16 Appendices to Sections

Include any appendices required by technical sections immediately following the technical section.

5.17 Bid Schedule

Preparation of the bid schedule is the responsibility of the A-E. Use Document UFGS-00101 in SPECSINTACT to prepare the schedule. The A-E shall discuss the need and details with the Project Leader as early in the design process as feasible and shall submit, if required, a draft or outline bid schedule with the 35% design submission. A preliminary bid schedule, if required, shall be provided with the 35% submission. A complete bid schedule, if required, shall be submitted with the 100% design submission.

5.17.1 Bid Items

Bid items are used for the purpose of obtaining bids on separate parts of the work within the project, when it is judged that funds available for the total scope of work may be insufficient. A bid schedule shall not include bid items solely for the purpose of obtaining cost information. A maximum of four bid items may be included in the bid schedule, unless approved otherwise by Code CH32, Kami Dhingra (202-685-3124).

5.17.2 Usable Facility to be provided

The base bid item, i.e., “Bid Item 1”, shall be so composed that an award of the base bid item provides a functionally complete and usable facility.

5.17.3 Additive Bid Items

When it appears that funds available for a project may be insufficient for all the desired features of a project, the Contracting Officer may provide in the Invitation for a base bid item covering the major portion of the work and for one or more additive bid items. However, not more than four additive bid items may be submitted unless approved otherwise by Code CH32, Kami Dhingra (202-685-3124). Each additional bid item progressively adds specified features of the work in a stated order of priority. Cost Estimates shall be prepared for each bid item.

5.17.4 Option Items

When it appears that funds will not be available in time for advertisement, but may be available later, use Option Items instead of Additive Items above. If it is questionable whether the available funds are sufficient to cover the base bid items, Additive Option Items may be used. Deductive Option items shall not be used. The facility based on the additive option(s) must still meet the test of providing a functionally complete and usable facility.

5.17.5 Bid Items on Projects Drawings

Never label Bid Item 1 on the project drawings. As a rule, do not label any bid items on the project drawings. However, labeling of bid items may be appropriate and necessary where alternate designs are required to describe bid items.

SECTION SIX:
COST ESTIMATES

SECTION 6: COST ESTIMATES

6.1 General

Cost estimates submitted for review, that do not conform to the following, will not be reviewed by the government and will be returned for compliance.

6.2 Objective

The objective of the Cost Engineer is to develop an estimate to reflect the lowest possible price at which the project can be awarded. The lowest possible price is defined as the lowest price at which a responsible Contractor is willing and able to perform the work defined by the contract documents. This requires accurate pricing, experienced judgment and accurate assessment of market conditions. "Padding" of the estimate in either pricing or quantities to be safe shall be avoided. It is expected that the final estimate will approximate the low responsive bid within + or - 10%. Estimates that exceed + or - 15% of the low responsive bid will require an immediate bid analysis by the A-E to determine the reason(s) for the variance. A written explanation listing specific areas of difference between the Government estimate and the bidding contractors shall be provided to Cost Engineering not later than seven calendar days following notification that a bid analysis is necessary. The response shall include an award/reject recommendation based on the findings with full rationale to support the recommendation. The bidders for the contract should be contacted by the A-E during the bid analysis. The project AIC/EIC will provide a list of bidders to be contacted along with POCs and phone numbers.

6.2.1 General Requirements

All projects with an Estimated Construction Cost (ECC) over \$100,000 require that the estimate be prepared using the SUCCESS™ Estimating and Cost Management System computer program.

- Two methods of obtaining the latest version of SUCCESS™ for NAVFAC cost estimating:
 1. INTERNET—The NAVFAC Cost Engineering website is now active, and allows download of the SUCCESS™ software and updates directly from the Internet at <http://www.uscost.net/CostEngineering/>
 2. CD-ROM—SUCCESS™ is still carried on the Construction Criteria Base (CCB) CD-ROM however, there is now a subscription charge required. For further information, visit the site <https://www.ccb.org/ccbsubscribe/Subsmain.asp>

- **Instruction for using SUCCESS™**

LANTDIV specific instructions are contained in the document "Success Instructions", available at (http://www.efdlant.navy.mil/download/lantops_04/Success-HT.pdf). This document is updated whenever policy or software changes.

- **Report Updates**

NAVFAC reports are provided with both the CCB and website versions of SUCCESS™, these reports are configured as part of the installation routine. Updates are periodically posted on the NAVFAC website, and may be downloaded directly.

- **Multiple Estimates**

Prepare estimates for each non-identical building, structure or addition exceeding \$100,000 Estimated Construction Cost (ECC). Costs of alteration work to existing buildings will not be included with building additions cost. When one construction cost contains more than one type of work (such as new construction, repair, and equipment installation), the SUCCESS estimate format shall provide subtotal of each type of work in the project and a project total to be shown on a single summary report.

- **Organization of the Estimate**

Sort construction work within the estimate in accordance with the Tri-Service Work Breakdown Structure (WBS) 3rd level such as 02 (Superstructure); 02.03 (Stair Construction); 02.03.02 (Exterior Stair Construction). The work items included at the various system levels are stated in the WBS Dictionary that is installed with SUCCESS™ software or available at (http://www.efdlant.navy.mil/down/lantops_04/wbsdictionary.pdf).

- The level of detail in the estimate is expected to correspond to the level of detail on the drawings.
- Include the following Navy reports with each submittal also, the electronic copy of compressed SUCCESS™ file.
 - A. Summary Report
 - B. System Report
 - C. Assembly Category Report
 - D. Mark-up Report
 - E. Detail Report Unburdened
 - F. Specification Summary Report if requested by the project leader. This report can only be achieved if proper numbering system is used for the item codes as per specification divisions (This report is required to breakout estimate in CSI format with some modifications as normally done in the construction industry from division 1 to division 16 to compare with contractors estimate).
- Final government estimates are classified 'For Official Use Only' Access to or disclosure of information regarding the estimate shall be limited to personnel whose official duties require knowledge of the estimate.
- Davis-Bacon Wage Rates minimum rates are incorporated into the Norfolk Area Templates for SUCCESS. A&E is responsible for incorporating Davis-Bacon Wage Rates for the specific project location. A&E is also responsible for the current construction market conditions affecting the geographic area prices and are to be determined by A&E.
- Provide sufficient information within the estimate to enable the reviewer to verify unit cost without frequent reference to drawings and specifications. Indicate costs that are quotations (prices to a construction contractor). It is not necessary to identify the quotation source in the estimate, however, the A&E should be prepared to identify the quotation source, upon request, to NAVFAC Washington reviewer.

- Congressionally appropriated construction funding is fixed. Unless directed otherwise by the NAVFAC Washington PLC (Product Line Coordinator) or Project Manager, provide a base bid of approximately 90% of the construction funds and provide additive/ option items as necessary to complete the full scope within available funds.

6.3 Submission Requirements

EFA-EFD 1391

When a DD 1391 Submission is required, the cost estimate shall be prepared utilizing the DD 1391 format. Since no design has yet been developed, careful attention should be exercised to insure that all major scope requirements are properly considered and evaluated. The cost estimate for the DD 1391 submission shall be based on the latest DOD Guidance Unit Cost Data or other historical cost records, NAVFAC Cost Escalation Index, and Area Cost Factors. The Supporting Facilities for the project are normally in the range of 15% to 25% of the Primary Facility cost. If the Supporting Facilities costs are not within this range, then the deviation should be clearly explained in the requirement for the project.

A. The Parametric Cost Estimate (PCE)

The cost estimate shall be prepared utilizing the SUCCESS program and/or the parametric cost models. This estimate formulates the cost data presented in Block 9 of the DD Form 1391 from which Congress authorizes and appropriates construction funds for the project. Appropriate allowances must be made for all features of the project at this stage. Arriving at the project cost consists of three steps:

Preparation of the Parametric Cost Estimate using building and site models and/or NAVFAC Guidance Cost.

1. Preparation of the Budget Estimate Summary Sheet; and
2. Preparation of the DD 1391

The PCE Submission shall provide a breakdown of Primary and Supporting Facilities costs by assembly level (level 3) summarized by subsystem (level 2) in order to transfer costs to the Budget Estimate Summary Sheet and DD 1391. The Primary Facility includes all construction items inside the five-foot line. The five-foot line is an imaginary line around the footprint of the building. All work within this area is considered as building cost. An exception is that special construction features (e.g. special foundations), unique to the building because of the location, are to be included under Supporting Facilities. Supporting Facilities include all construction items outside the five-foot line such as utility services, site improvements, roads and parking, building demolition; or special construction features unique to the building because of location, such as special foundations (piling, engineered fill, vibroflotation, etc.), sound attenuation considerations, and contaminated soil removal. (<http://www.efdlant.navfac.navy.mil>)

6.4 Schematic Design Submission

The Schematic Design Submission Cost Estimate, when required, shall be prepared utilizing the Success program and the parametric cost models. Since little design has been developed, careful attention should be exercised to insure all major cost elements are properly considered and evaluated. The Schematic Design Submission Cost Estimate shall include a system quantity and unit cost for every subsystem (level 2) in the project.

6.5 Preliminary 35% & 60% Submissions and Draft & Final Design-Build Submissions

The Preliminary 35% and 60% Submissions Cost Estimates and the Draft and Final Design-Build Submissions Cost Estimates shall be prepared in as much detail as possible. Although the detailed system estimate may lack full definition at this stage, there should be a fully developed listing of the major assemblies of the project complete with unit costs. It is recognized that this estimate is based on preliminary drawings and quotes and that revisions to the cost are likely as the project drawings and specifications are further developed.

6.6 100% Submission

The 100% Submission Cost Estimate shall be developed from complete drawings and specifications. The estimate shall be based on a fully detailed and accurate quantity takeoff with current unit prices. The A-E shall provide a brief narrative description of how the Cost Estimate was developed and what sources of pricing data were used in the estimate. The A-E shall provide specific rationale for factors that have a significant impact on the Cost Estimate (i.e. local market conditions, project size, complexity, etc.).

6.7 Final Submission

The Final Cost Estimate should normally require only minor revisions to the 100% Cost Estimate. The estimate should reflect any final adjustments in the project cost to assure the estimate is in line with the market conditions expected at the bid date and incorporates all changes that result from 100% submission review. For all projects, the A-E shall provide a copy of the estimate on an electronic medium.

SECTION SEVEN:
INSTRUCTIONS FOR A-E
INVOICING

SECTION 7: INSTRUCTIONS FOR A-E INVOICING

(NOTE: In this section, the term "Contractor" refers to the A-E.)

7.1 GENERAL

The following instructions are for the assistance of the A-E in the preparation and submission of the Contractor's Invoice Form NAVFAC 7300/30 (rev 06/02), the Contract Performance Statement NAVFAC Form 7300/31 (rev 06/02), and the Contractor's Release (NAVFAC Form 4330/7). Copies of these forms and instructions are provided in Appendix VI. Other forms will not be accepted for invoicing purposes. (Electronic copies may be requested by contacting the Contracting Officer.) If additional assistance is needed in the preparation of these documents, the A-E should contact the Contracting Officer.

When submitting an invoice for payment, one electronic copy of the Contractor's Invoice and the accompanying Contract Performance Statement shall be submitted to the attention of Component Business Office (CBO). Invoices are to be converted to PDF or similar email-compatible format and sent electronically to invoice@efaches.navy.mil. A copy should be retained by the A-E. The A-E may invoice monthly or at longer intervals, at the A-E's option. The Government will not accept invoices for the same contractual action within a thirty-day period. The A-E is advised that any Government retentions must be re-invoiced for payment. Government retentions are not automatically disbursed.

Invoices are to be submitted in accordance with the instructions found in Appendix VI. Invoices that are not filled out correctly or are missing required information will be rejected and returned to the A-E.

Invoices for Indefinite Quantity Contracts shall be submitted separately for each individual delivery/task order. The invoice shall contain the delivery/task number assigned to that project. The A-E shall invoice separately for design services/engineering services and Post Construction Award Services.

7.2 PAYMENT PROCESS

Upon receipt of a properly submitted invoice, Code CBO initiates action to the appropriate technical representative (AIC/EIC, ROICC or 05) for validation that the work being invoiced for has been completed satisfactorily. Subsequent to confirmation by the technical representative, the invoice is certified and submitted for payment. In the event that payment has not been approved or not approved in full by the technical representative, notification with justification of payment denial will be provided to the A-E.

The entire invoice process has a 30 calendar day allowance for completion beginning with the date a properly submitted invoice is received by Code CBO, and ending with the date the check is issued to the A-E (excluding mailing time). Inquiries regarding the status of an invoice may be made approximately 36 calendar days after submittal.

APPENDICES

Appendix I: BASIS OF DESIGN REPORT

The following is an example of the format and content for the Basis of Design Report. Each discipline shall discuss Sustainable Design features incorporated into the project as outlined in Section 2.14.

I.1 Architectural/Interior Design

1. **Design Area Tabulation:** The project gross area shall not exceed that area stipulated by the scope of work contained in the 1391, without prior approval of NAVFAC Washington. The A-E shall provide in the Basis of Design a complete program to include area breakdown tabulations for gross and net area to conform to scope and statutory criteria. A supplemental drawing, indicating method of area takeoff, shall accompany the area tabulation. Area square footage shall be calculated in strict compliance with DOD MIL-HDBK-1190. If the square footage is revised, the A-E shall resubmit the area tabulations at the 100% or Final Submissions.
2. **Materials:** A-E shall provide a description of materials for all major items of construction and all interior and exterior finishes. The description of the finishes may be accomplished by the use of a preliminary finish schedule. Finishes shall be appropriate for the design function. Allowable finishes are normally selected from the design publication pertaining to the specific type of facility.

I.2 Structural

1. **Criteria:** The A-E shall list all criteria being used in the structural design of the project. The list shall include Design Manuals, Mil Handbooks, Codes, Commercial Criteria, and Industry Standards.
2. **Design Loads:** The A-E shall provide a tabulation of Design Loads (Dead, Live, Roof, Snow, Wind, Seismic, etc.). The A-E shall also indicate the values for the various criteria parameters, which are used in derivation of the applied loads.
3. **Foundation, Floor and Roof Systems:** The A-E shall provide the alternative structural systems considered for each system. The discussion shall include a detailed description of the proposed foundations, floor and roof systems including dimensions of the major elements and bay spacing, and an evaluation of the advantages, disadvantages, and economics of each alternative.
4. **Structural Framing System:** The A-E shall provide a discussion of the alternative structural systems considered and proposed for transferring the lateral and vertical loads to the foundation. The discussion should include an evaluation of the advantages, disadvantages, and the economics of each alternative.

I.3 Mechanical

- 1. General Requirements:** The A-E shall indicate the operational aspects of the building that affect energy/HVAC usage (such as hours of operation, functions in the building that require special attention, zoning characteristics, etc). Indicate the facility's different functions and their general HVAC needs and zoning.

- 2. Heating and Air Conditioning:**
 - The A-E shall give full consideration to all applicable design policies described in MIL-HDBK-1190 & MIL-HDBK-1003/1.
 - Indicate the inside design temperature and relative humidities, the outside wet and dry bulb design temperatures, and the "U" factors for the type of construction proposed.
 - Specify areas to be heated and/or air-conditioned.
 - Provide a description of the Heating and Air Conditioning systems proposed. Discuss the concept of piping distribution and the type of terminal systems. Discuss the number and type of chillers and boilers proposed and their operational arrangements, etc.
 - Provide a description of the available utilities, such as, chilled water, steam, high temperature hot water, natural gas, etc., and how the proposed mechanical design will use the utilities for the HVAC systems.
 - Provide an outline of energy conserving features of the system.
 - Provide a brief description of the control system proposed.
 - Briefly describe the merits of the proposed system in terms of first costs, operating costs, efficiency, maintainability and practicality for the project's requirements to be satisfied.

- 3. Ventilation:** The A-E shall describe how the ventilation system is to be provided and how the quantities were derived. Describe the smoke removal systems employed, and the operation of the total system in summer and winter use.

- 4. Building and Load Characteristics:** The A-E shall provide a summary of the building and load characteristics for the project. This shall include the cooling load characteristic (gross square foot per ton), the heating load characteristic (BTU per gross square foot), and other load factors used in the calculations to account for loads due to people, ventilation, equipment, lighting, power, etc.

- 5. Automatic Temperature Controls:** Provide a description of the type of controls that will be employed in the project and the basis of this decision. Discuss any characteristics of the control system that are required by the activity and/or user. Some activities desire proprietary characteristics that must be identified early. If the new control system is to communicate with or be integrated into an existing control system, provide a discussion of how this is done. If industry standard communication protocols are to be employed, discuss why and how this is to be achieved.

- 6. Plumbing:** The A-E shall provide a description of the domestic cold water

supply system, the hot water supply system, the sanitary drain and venting system and the storm water drainage system. Provide design factors that will be used in the calculations. Select the type of materials proposed for the water pipe, stacks, etc. Provide size of domestic water service pipe, sanitary pipe and storm sewers. Provide available water pressure data. Indicate use of sump pumps and ejectors. Indicate the need for special systems, such as gas, compressed air, vacuum, distilled water, medical gases or other special systems.

7. **Refrigeration (Cold Storage):** The A-E shall provide a statement of areas to be refrigerated, including their usage and temperatures to be maintained, as well as the outside design dry and wet bulb temperatures, the type of refrigeration equipment, and the type and thickness of the refrigeration insulation.
8. **Fuel Distribution and Storage:**
 - For gas distribution, provide a statement of the type, the location of the takeoff from the supply and the available pressure, and describe the type and the materials for the pipe and valves.
 - Provide a statement of the type of unloading facilities, e.g., dock, tank car or truck, indicating the type of system and the proposed features for liquid petroleum gas systems (LPG). Indicate the basis for the storage capacity, the rate of pumping and the number of dispensing outlets. Describe the power supply and power requirements. Select the type and the materials for the pipe, tank and valves. Describe the LPG system and materials, where applicable. Describe the method of spill prevention, containment and leak detection alarm, meeting current criteria.
9. **Combination Systems:** Consolidating the previous requested information for systems in which the heating, ventilating and/or air conditioning are combined may eliminate repetition.
10. **Energy Conservation:** Discuss the energy conservation features being considered and employed in the design in accordance with ASHRAE.
11. **Miscellaneous Mechanical Systems:** The A-E shall provide a description of any special mechanical systems, e.g., compressed air, hydraulic, nitrogen, etc., and explain the source of the medium.
12. **Heating Plants and Heating Plant Additions:**
 - Provide a statement of the type of fuel to be used and an economic comparison of the selected fuel with other available fuels.
 - Include a brief description of new boilers, including size, pressure and type.
 - Include a description of any new auxiliaries to be added and the source of power to be used for their operation.
 - Prepare a description of the safety and combustion control systems utilized and how they will perform.

I.4 Electrical and Telecommunications

A. Interior Distribution Systems [See NAVFAC Washington Electrical Engineering (EE) Checklist.]:

- Provide a description of the electrical characteristics for the proposed system(s), including phase(s) and voltage.
- Provide estimates of KVA demand for each portion of the electrical distribution system. Do not rely only on calculations (i.e., connected load with arbitrary demand factors applied) in sizing major electrical equipment. Consider any available metering data of similar facilities and loads, from activity; published data from journal articles, utility companies, etc. Do not rely solely on advice from customers, other engineering disciplines, etc., in estimating electrical demand, since such advice, if taken verbatim, may result in excessively sized electrical equipment.
- Provide a breakdown of estimated load for: lighting; convenience outlets in walls & floors; systems furniture and other office loads; power for HVAC, plumbing, water & sewer (e.g., heating, air conditioning, compressors, pumps); power for elevators; loads for special operating equipment (400HZ, cranes, warehouse tools, receptacles for special equipment, etc.):
- Provide a description of proposed design. For lighting systems, describe type of fixtures, lighting intensities, and proposals for occupancy sensors, dimming, and day lighting controls. Describe plan for provision of power distribution to plug loads (e.g., prewired office furniture systems, printers, copiers, etc.) Also, alert us of any unusual conditions, or nonstandard design that is being proposed/considered because of unusual restrictions, or because of requests from station or building occupants. Notify us of directions that the A-E is awaiting.
- Provide calculations to show short-circuit duty requirements for protective devices and switchgear. Also provide voltage drop calculations.
- Indicate motor control and type, e.g., variable frequency drives, across-the-line, reduced voltage, etc., and rationale for selection.
- Address the provision of interior small signal telecommunications system pathways, raceways, spaces, grounding, and, as required, wires, jacks, and entrance equipment. Systems to be addressed include voice, data, LAN, intercom, security, and cable TV. Design shall at minimum comply with Military Handbook 1012/3, EIA/TIA 568A, 569 & 607. Participation in AE design by an RCDD is encouraged. (Fire protection system requirements, including alarm systems, should be covered in a separate portion of the Basis of Design).
- Address the adequacy of the exterior power distribution system to serve the new load at the point of connection. If the source is inadequate, indicate measures necessary to correct the deficiency.
- Indicate and describe any special power system requirements, e.g., emergency power

generator(s), 400Hz systems, lightning protection, grounding, UPS systems, etc.

B. Exterior Distribution Systems [See NAVFAC Washington (EE) Checklist.]:

- Address the adequacy of the primary supply system at the point of connection. If the primary source is inadequate, indicate proposed measures to correct the deficiency.
- Indicate the electrical characteristics of the power supply to the activity or the portion involved, including circuit-interrupting requirements and voltage regulations.
- Provide an estimate of KVA demand. Also see item A.(2) for analogous requirements.
- Indicate the basis for the selection of the primary and/or secondary distribution voltage.
- Provide a description of the proposed design, e.g., voltage drop, physical characteristics of overhead or underground circuits, and type of lighting intensities and lighting fixtures.
- Describe requirements for exterior small signal telecommunications requirements including raceways, ductbanks, and, as applicable, cables. See item A. (6) for analogous requirements. (Fire protection system requirements, including alarm systems, should be covered in a separate portion of the Basis of Design).
- Indicate the short circuit duty required for protective devices and switchgear to insure adequacy and function of the proposed electrical system.

I.5 Civil

A. Criteria

- The A-E shall list all criteria being used in the civil design of the project. The list shall include Design Manuals, Mil Handbooks, Codes, Commercial Criteria, and Industry Standards.

B. Water Supply:

- Provide an evaluation of the existing system, including the type, capacity, condition, present water use, and unsatisfactory elements of component part (for major extensions).
- Include a statement of the type of construction, proposed materials for water mains, type of well, etc.
- Provide a discussion of the design for distribution systems indicating the domestic and fire flow, the residual pressure, and the elevation differentials (This should include the designer's basic estimate of the tentative pipe sizes.).
- Provide a statement of the tentative sizes, elevations, capacities, etc., as can be readily determined without long computations or design, consideration for reservoirs, treatment units, pumping plants, well pumps, etc.

C. Storm Sewers and Drainage Conveyance Systems:

- Provide descriptions of existing systems, including information as to type, capacity,

and condition

- Discuss the design factors to be employed to fully meet all pertinent design criteria and regulations.
- Identify systems currently surcharged as well as those potentially surcharged as a result of construction.
- Recommend design solutions to economically improve systems incapable of adequate stormwater collection and conveyance.
- Indicate acceptable system materials and construction methods.

D. Sewers and Sewage Disposal Systems:

- Provide an evaluation of the existing system, including the type, capacity, condition, present flow and the unsatisfactory elements of the component parts for major extensions.
- Include an interpretation of the degree of treatment necessary by effluent requirements and the units necessary for treatment.
- Provide a statement of the design factors with present and projected design population loads for sewage treatment plants.
- Indicate the materials to be used for sewer systems and sewage treatment plants.

E. Roads, Driveways, Parking Areas and Walks:

- Provide a statement of the general soil conditions, with a brief outline of the soil exploration and testing performed.
- Describe the type and volume of traffic, controlling wheel loads, and types of classes of roads under consideration, with justification for any deviation from criteria thicknesses for those classes.

F. Airfield Pavement:

- The relative economics of rigid and flexible paving are constantly changing with the improvement of design features and construction techniques and with the development of new products. These factors are of significant importance in both new pavement construction and in the rehabilitation of existing pavements. All projects require careful study and evaluation of the in-place materials and the proposed construction materials. For the purposes stated, NAVFAC wishes to carefully review the design cross-sections of all major airfield-paving projects.
- MIL-HDBK-1190 requires that alternate designs be prepared for both concrete and flexible pavement of all non-critical areas and that the contractor be given the option of providing either. There are no quantity limitations on this requirement.
- Include a statement of general soil conditions with a brief outline of the soil exploration and testing performed.
- Indicate wheel loading, type of aircraft and any abnormal operating conditions.
- Indicate the type of pavement, e.g., bituminous, concrete, reinforced, etc.
- Include deviations from design publications and/or Naval Air Systems Command planning standards, along with justification for the deviations.
- Describe the method of handling storm drainage.
- Provide a general statement describing the type of lighting to be provided and the adequacy of existing runway and taxiway regulator capacities.

G. Erosion/Sediment Control and Stormwater Management:

- Provide a brief description of the project site noting pertinent topographic and geographic characteristics such as general ground slope, ground cover, presence or

lack of surrounding development, and proximity to wetlands or water courses which could effect the design requirements for erosion and sediment control and stormwater management.

- Describe the proposed erosion and sediment control measures in sufficient detail to assess the designer's intent. Cite the pertinent criteria and regulations being addressed. Inclusion of sketches is suggested, but not required.
- Describe the proposed stormwater management measures in sufficient detail to assess the designer's intent. Cite pertinent criteria and regulations being addressed. If any variance from regulations is contemplated, describe the justification for the variance in sufficient detail for review and approval. Inclusion of sketches is suggested, but not required.
- In the case that a waiver of stormwater management is contemplated, discuss the basis for requesting a waiver. Provide enough information to evaluate the justification and judge if it is warranted based upon the applicable criteria and regulations. Inclusion of sketches is suggested, but not required.
- Provide a brief description of the Stormwater Management (SWM) facilities proposed or a brief explanation of the basis for a waiver application. Also provide a brief description of the Erosion/Sediment Control facilities proposed.

H. Fencing:

- Provide a type, height and justification for fencing.

I. Cathodic Protection:

- Provide results of soil resistivity measurements, when underground storage tanks or piping systems are required.
- Include variations in soil makeup.
- Indicate the soil moisture content and normal seasonal variations.
- Include the results of structure-to-soil potential measurements, where protection is to be provided for existing underground structures or where buried test specimens are used for a new installation.
- Include the results of the temporary cathodic protection tests, if any.
- Indicate the type of cathodic protection applied and the reasons for its selection.

J. Environmental Pollution Control:

- The A-E shall provide a statement describing potential environmental pollution and the proposed method of control. A detailed description shall be necessary for those facilities directly related to controlling air and water pollution, e.g., sewage treatment plants, industrial treatment facilities, incinerators, smoke elimination facilities, buried tanks and piping, etc.

K. Site Development:

- Describe the site of the project and its natural advantages and disadvantages, relative to the proposed project. Additional statements shall be made outlining the proposed landscaping (hardscape and softscape) and other site work necessary to complete the site development.

I.6 Hazardous Materials

A. General Information:

- Discuss findings of prior hazardous materials tests with activity Environmental personnel (i.e., is the site free of environmental concerns such as petroleum contamination, heavy metals, etc.)
- Identify the hazardous materials and waste expected to be encountered in the project.
- Include statements describing the steps taken to identify these materials and the appropriate measures required to ensure that pertinent hazardous material regulations will be met.
- Where hazardous materials are known to exist, include appropriate sections in the specifications as described below.

B. Asbestos Containing Materials:

- Wherever asbestos-containing material is known or suspected to exist, an asbestos survey must be performed prior to preparing plans and specifications.
- If the survey confirms the existence of asbestos containing material, include section UFGS-13281N, Engineering Control of Asbestos Containing Materials. **Note that persons editing Section 13281 are required to have current certification for passing the EPA sponsored course of Asbestos Designer.**

C. Lead Paint

- In projects involving the renovation or demolition of buildings (other than housing) built prior to 1980, assume that all painted surfaces are coated with lead containing paint. Do not conduct a lead paint survey. Include in the specifications the NAVFAC Washington regional section UFGS-C-02220N, Site Demolition. That section includes all the requirements to adequately cover the safe handling of lead. Unless the project requires the removal and disposal of lead containing paint, for example in preparation of repainting in historic structures, do not include Section UFGS-13283N, Removal/Control and Disposal of Paint with Lead.
- For projects involving the removal of lead containing paint, for example in preparation for repainting in historic structures or in family housing, use section UFGS-13283N, Removal/Control and Disposal of Paint with Lead.
- Use section UFGS-13282N, Lead in Construction, if the project requires the removal and disposal of lead in forms other than paint, such as lead in rifle ranges or lead contaminated soils.
- In projects involving the renovation or demolition of buildings built after 1980, do not include any sections that mention Lead paint. Do not include the NAVFAC Washington regional section UFGS-C-02220N, but use section UFGS-02220N.

D. Polychlorinated Biphenyls (PBC)

- If Polychlorinated Biphenyls (PBC) are known to exist in or around a project site, require its removal and disposition by including Section: UFGS-13284N, Removal and Disposal of Polychlorinated Biphenyls (PBC).
- If Polychlorinated Biphenyls (PBC) contaminated soil is to be removed, include Section UFGS-13285N, Removal and Disposal of PBC Contaminated Soil,.
- If Polychlorinated Biphenyls (PBC) Ballasts and Mercury containing Lamps are known to exist in a project involving the renovation or demolition, include UFGS-13286N, Handling of Lighting Ballasts and Lamps Containing Mercury

E. Radon Mitigation

- If the project requires radon mitigation, include Section UFGS-13287N, Radon Mitigation.

I.7 Fire Protection

Fire Protection Basis of Design Report

The following information shall be provided for every project, whether it is new construction or a renovation project. This information shall be entitled "Fire Protection".

- A.** Provide a written analysis demonstrating that the minimum requirements of UBC have/can be satisfied. The analysis must include the following information as a minimum; the occupancy classification; height and area calculations; type of construction; required building separation or exposure protection; rating of structural components; classification of interior finishes; location of fire-rated walls and partitions; description of construction (e.g., spray-applied fire proofing on beams and columns, but not on the underside of the floor slab; how the space between the curtain wall and the flooring will be sealed to maintain the hourly rating of the floor; etc.)
- B.** Provide a written Life Safety Analysis demonstrating that the minimum requirements of NFPA 101 have/can be satisfied. The analysis must include the following information as a minimum; exit information, including the number of exits, type of exits, exit travel distance, total exit width, total occupant load, common path of travel, etc. Provide all exiting information on the furniture layouts.
- C.** Description and location of all new and existing fire extinguishing and/or detection systems, fire alarm systems, fire pumps to be provided or existing to remain or modified.
- D.** Location of required fire hydrants (new and existing). If the fire hydrants (new and existing) are not shown on the civil drawings, a statement identifying drawing location and hydrant compliance with Navy criteria, will be acceptable.
- E.** Identification of all hazardous areas (chemicals, fuels, ordnance, etc.) and the indication of how these hazards will be protected.
- F.** Summary of the data obtained from the water flow test and determination of the adequacy of the water supply (even for facilities without sprinkler protection), along with sketches of the water distribution system
- G.** For facilities that will be provided with automatic sprinkler systems, provide the following information:
 - Description of sprinkler system(s)
 - The area(s) that will be protected, the classification of the area(s) and the type of system protecting these area(s)
 - The design density, demand area and hose stream allowance to be specified for each different area
 - The method for connecting the sprinkler system to the fire alarm system, as well as the method of zoning the systems and a description of any power disconnects, pre-alarms, etc. that will be required
 - Hydraulic calculations showing that the water supply is adequate for the suppression systems and hose stream demand. For hydraulic calculations, deduct the hose stream requirement at the point of connection to the existing distribution systems or the

closest fire hydrant, whichever is closer to the sprinkler riser. If these demands cannot be met, the A-E shall provide the proper solutions to the problem of an insufficient water supply (e.g., fire pump(s), and/or water storage tank(s), etc.).

- H.** Sketches where appropriate (e.g., water distribution system, sprinkler demand areas, show hydraulic reference points for the hydraulic sprinkler calculations, exiting information, travel distance, common path of travel, etc.).
- I.** Information on all existing fire detection and suppression systems for existing buildings (i.e., type of systems; area of coverage; make and model of all equipment). For fire alarm systems, provide the following information (at a minimum): number of spare zones and spare spaces for modules, capacity of control panel(s), list of existing fire alarm zones, list of outputs, number of audio/visual circuits, standby battery capacity, indicate the working order of each system, etc.
- J.** Provide any relevant information pertaining to special hazards and how they are protected, special fire protection systems, R-F Shielded Rooms, Computer Rooms requiring special fire protection considerations, i.e., Shunting of power, etc.

Appendix II: INTERIOR ARCHITECTURAL DESIGN & SUPPLEMENTAL INTERIOR DESIGN

The A-E shall employ the services of a professional interior designer who shall meet with NAVFAC Washington Interior Design Staff to discuss proper submission format. Interior designs shall be the result of a coordinated effort between all design disciplines and shall provide the necessary information for a complete and integrated design.

II.1 Interior Architectural Design

II.1.1 Objective

To develop a space program and to coordinate selections of architectural finishes and signage.

II.1.2 Contents

- A. Space Program
- B. Architectural Finish Schedule, Color Key and Finish Boards
- C. Architectural Signage, Graphics and Schedule(s)

II.1.3 Procedures

The A-E and a member of their interior design staff shall attend the pre-design conference to establish project definition and program requirements.

The A-E shall accomplish the work in four phases and in conjunction with the progress submissions as outlined in Section 3: A-E Contract Submission Requirements. Submissions are as follows:

PHASE A SHALL INCLUDE:

1. A space program, which ensures a clear understanding of the facility function and customer requirements. The programming effort may require “squatters sessions” in which the A-E shall engage in customer interviews and on-site working meetings. Programming may also entail review of DOD Space Requirements Form DD 1450, organizational charts and A-E generated surveys. The type of facility and its function shall determine the extent of the programming effort.

The A-E is responsible for using the following criteria:

- a. DOD Instruction 5305.3
- b. SECNAV Instruction 5910.8
- c. NAVFAC P-80

2. Floor plans indicating blocking and stacking of adjacencies and proposed type of furniture to be used, i.e., systems, modular, and/or conventional.
3. Additional layouts indicating furniture “test-fits” may be required to ensure that space allocations and adjacencies are accurate. This may entail the development of several schemes, which shall be considered reasonable at this early stage of design development.

PHASE B SHALL INCLUDE:

1. Floor plans indicating any built-in furnishings, i.e., cabinetry, visual display boards, and any other elements of interior design which interface with the architecture and other design disciplines.
2. Preliminary selections of architectural finishes and signage. Actual samples and colors shall be shown on finish display board(s), of a manageable size (suggested 14 inches by 18 inches; not larger than 20 inches by 30 inches). Two copies of the board(s) shall be submitted.
3. Preliminary Finish Schedule indicating finish locations.
4. Preliminary signage schedule indicating design intent. Signage shall include a logical room-numbering and identification system, directional signs and directories. The signage system shall be coordinated with the customer and shall conform to the guidelines of the activity. All signage must comply with Americans with Disabilities Act Accessibility Guidelines (ADAAG).
5. A-E shall present submission to customer and NAVFAC Washington. After review of the submission, display boards will be returned to the A-E. If comments indicate that the finish selections are unacceptable, additional presentations will be required until an acceptable solution is attained.

PHASE C SHALL INCLUDE:

1. Project drawings and specifications which are part of the construction bid package, i.e., finish schedule, signage drawings and schedules, any plans and elevations indicating flooring patterns or finish locations.
2. Finish display board(s). All finishes must be displayed in order to reference color and texture. Three copies shall be submitted. Government shall retain boards at this time unless corrections are required.
3. A-E shall present submission to customer and NAVFAC Washington.

PHASE D SHALL INCLUDE:

Final project drawings and specifications which are part of the construction bid package as described above in C.1.

II.2 Supplemental Interior Design

When Supplemental Interior Design services are required, the interior designer(s) shall be directly involved in the Interior Architectural Design process as well to ensure an overall integrated design.

II.2.1 Space Planning

II.2.1.1 Objective

To provide space-planning design services resulting in generic furniture floor plans.

II.2.1.2 Contents

Generic Furniture Floor Plans

II.2.1.3 Procedures

The A-E shall accomplish the work in four phases and in conjunction with the progress submissions as outlined in Section 3: A-E Contract Submission Requirements. Submissions are as follows:

PHASE A SHALL INCLUDE:

1. Preliminary generic furniture floor plans indicating possible options in furniture arrangements and proposed types of furniture to be used; i.e., systems, modular and/or conventional.
2. A-E shall present submission to customer and NAVFAC Washington.

PHASE B SHALL INCLUDE:

1. Proposed generic furniture floor plans indicating coordination between other design disciplines; i. e., mechanical, electrical, lighting and communications layouts.
2. A-E shall present submission to customer and NAVFAC Washington.

PHASE C SHALL INCLUDE:

1. Generic furniture floor plans
2. A-E shall present submission to customer and NAVFAC Washington.

PHASE D SHALL INCLUDE:

Final generic furniture floor plans. These plans shall be included in construction bid documents in order to maintain design coordination and shall be marked in bold letters "FOR REFERENCE ONLY".

II.2.2 Furnishings Procurement Package

II.2.2.1 Objective

To provide a coordinated specific (three sources) selection of furnishings.

II.2.2.2 Contents

A. Furnishings Brochure

Title and Table of Contents sheets
Purchase Description sheets
Furniture Plans (full size) keyed to individual items.
Cost summary sheets
Photographs of finish display board(s)

Furnishings Brochure may also require additional information such as selection justifications, possible alternate selections and/or implementation plan for the re-use of existing furnishings together with the use of new items.

B. Furnishings Display Boards

Furnishings display board(s) shall incorporate catalog cuts and finishes of all proposed furnishings, i.e., casegoods, systems furniture, panel fabrics, component finishes, seating, upholstery, artwork, drapery, accessories, etc.

II.2.2.3 Procedures

The A-E shall accomplish the work in four phases and in conjunction with the progress submissions as outlined in Section 3: A-E Contract Submission Requirements. Submissions are as follows:

PHASE A SHALL INCLUDE:

1. Collateral Equipment List – Preliminary Furnishings Cost Estimate. Two copies shall be submitted.

PHASE B SHALL INCLUDE:

1. Preliminary furnishings selections. Selections shall be shown on display boards as described above. Two copies of the board(s) shall be submitted.
2. A-E shall present submission to customer and NAVFAC Washington.

PHASE C SHALL INCLUDE:

1. Display boards of furnishings selections. Two copies of board(s) shall be submitted.

2. Preliminary Furnishings Brochure. One copy of the brochure shall be submitted.
3. A-E shall present submission to customer and NAVFAC Washington.

PHASE D SHALL INCLUDE:

1. Final Furnishings Brochure. Three copies of the brochure shall be submitted.
2. Final Furnishings Display Board(s). One copy of the board(s) shall be submitted.

The guidelines in this Appendix pertain to design-build projects as well as Full Plans and Specification Projects. In the case of Design Build, the Interior Designer from the Design Team developing the RFP shall participate in the process and shall provide the services outlined in Phase A of **Interior Architectural Design**. If **Supplemental Interior Design** is a requirement to be included in the RFP, the Interior Designer shall also be responsible for developing a preliminary Collateral Equipment List and an associated Cost Estimate as stated in Phase A of **Furnishings Procurement Package**. After construction award, the Interior Designer from the successful design-build team shall verify the initial requirements of Phase A and then complete the remaining phases.

Appendix III: METRIC IN DESIGN & CONSTRUCTION

Specific Metric Design Guides

- For building dimensions and for equipment, use millimeters (mm). For site work and surveying, use meters (m).
- Round all dimensions to an appropriate number of significant digits without sacrificing or exaggerating the accuracy implied. As a rule, building dimensions should be rounded to the nearest 10 mm.
- Contract documents should not contain dual units on the drawings or in the specifications.
- Value Engineering Team Studies (VETS) should not override the use of metric.
- Use metric (SI) units in cost estimates and Parametric Cost Estimating (PCE).

Metric Drawings

Metric drawing scales are true ratios and are so indicated. They are the same for both architectural and engineering drawings. Conform to ASTM E 713, Selection of Scales for Metric Building Drawings. Preferred scales are:

1:1	Same as full size	1:100	Close to 1/8" = 1'-0"
1:5	Close to 3" = 1'-0"	1:200	Close to 1/16" = 1'-0"
1:20	Between 1/2" = 1'-0" and 3/4" = 1'-0"	1:500	Close to 1" = 40'-0"
1:50	Close to 1/4" = 1'-0"	1:1000	Close to 1" = 80'-0"

Concrete Block and Recessed Ceiling Fixtures

Federal law excludes concrete block and recessed ceiling lighting fixtures from mandatory conversion to metric dimensions. To comply with this requirement, place the following note on all relevant drawings:

“All dimensions on this drawing are shown in round metric numbers. Where concrete block or recessed lighting fixtures are shown, the contractor has the option to provide these products produced in inch-pound dimension. If inch-pound products are used, the contractor bears the responsibility and design cost to ensure coordination and compatibility with other building materials shown or specified.”

Resources for Metric Construction:

ASTM E 380, Use of the International
System of Units, and ASTM E 621,
Standard Practice for Use of Metric (SI)
Units in Building Design and Construction:

American Society for Testing and Materials
100 Barr Harbor Drive,
Conshohocken, PA 19428-2959
Telephone: 610-832-9585

MASTERMETRIC

Second Edition, July 1995
AIA Master Systems
332 East 500 South Street
Salt Lake City, Utah 84111-3309
Telephone: 1-800-424-5080

GSA Region 3's M2 Publication

Telephone: 215-656-5822
Available on CCB

Metric Newsletter:

National Institute of Building Sciences
1201 L Street NW
Washington, DC 20005-4024
Telephone: 202-289-7800

Lists of Currently Available

Metric Labeled Products:

The U.S. Metric Association (USMA)
10245 Andasol Ave.
Northridge, CA 91325-1505,
Telephone: 818-368-7443

Engineering Field Activity Chesapeake
Naval Facilities Engineering Command
CONTRACTORS INVOICE (A-E Contracts)

INVOICE DATE (1) January 1, 1998
INVOICE NUMBER (2) 0001
(3) 123:BLM

FROM: (4) ABC Corporation (POC: Mr. J. D. Doe/757-333-9999) Remittance Address: (5) ABC Corporation
123 Main Street, Washington, DC 20000 100 Main Street
Dallas, TX 50000

TO: Code 02AE, Contracts Department

1. Below is a Statement of Performance under Contract (6) N62470-98-C/D-0000 at (Station) Naval Station, Washington, DC
The enclosure provides breakdown of this statement of performance.

A. Total value of contract through change	<u>\$(7) 61,092.00</u>	
B. Percentage of performance complete		<u>(8) 35 %</u>
C. Value of completed performance		<u>\$(9) 21,382.20</u>
D. Less: Total of prior paid invoices		<u>\$(10) 18,382.20</u>
E. Amount of this invoice		<u>\$(11) 3,000.00</u>

Signature: (12) _____
Name and Title: (13) J. D. DOE, P. E., President

Government Approval

FROM: _____ Date _____

TO: _____

1. Payment is recommended as follows:

A. Amount of work completed to	_____	\$ _____
B. Less: Total of prior invoices	\$ _____	
C. Amount of this invoice	\$ _____	
D. Less: Retention this invoice	\$ _____	
(0 to 10% of Item C)	\$ _____	
Total retention prior invoices	\$ _____	
Other deductions	\$ _____	\$ _____
E. Sub-total		\$ _____
F. Less previous payments		\$ _____
G. Recommended amount for _____ payment		\$ _____

2. Elapsed contract time _____ %

3. Signature and Title _____
Technical Representative¹

Pursuant to authority vested in me, I certify that this invoice is correct and proper for payment.

DATE _____ Signature and Title _____

Authorized Certifying Officer¹

ACRN APPN/SUBHEAD OC BCN SA AAA TT PAA COST CODE AMOUNT

¹If the ability to certify and authority to recommend are combined in one person, one signature only is necessary; otherwise the Technical Representative will sign in the space provided.

S/M 0105-LF-003-0205

INSTRUCTIONS FOR COMPLETING
CONTRACTOR'S INVOICE (A-E Contracts)
CHESDIV 7300-30 (REV 2/98)
(Numbers in parenthesis correspond to the form)

- (1) Invoice Date: Date of submission of the invoice. This date shall not precede the date of award of the A-E contract, delivery/task order or any modification being invoiced.
- (2) Invoice Number: Assign Invoice Numbers chronologically (i.e., 0001, 0002, 0003, etc.). If a previous invoice has been denied payment, use the next sequential unused Invoice Number. Do not reuse the denied Invoice Number.
- (3) Contractor's Invoice Number: Firms may use this space for their identification for internal tracking.
- (4) From: Complete Name and Address of the firm **as shown on the contract document**.

In parenthesis following the complete name of the firm, provide a firm point of contact (POC) for the invoice action with that individual's telephone number.

In the event that the firm has moved since the execution of the contract, a formal request for a change of address signed by a firm official must accompany the invoice. Upon receipt of this request, an administrative contract modification will be issued changing the contractor address.

- (5) Remittance Address: If payments are sent to an address other than the address shown on the contract, the A-E shall insert that address. If the remittance address is the same as the address on the contract, the space shall be left blank. The remittance address must be approved by the contracting officer and incorporated into the contract by written modification.
- (6) Contract: The contract number as shown on the A-E contract. Include delivery/task order number when invoicing for IDQ contracts. Include the contract (or delivery/task order) title and the location of work as shown in on the A-E contract (delivery/task order).
- (7) Total Dollar Value of the Contract: This figure represents the **total value** of the Contract including all **executed** Modifications, Contract delivery/task orders and Modifications to Contract delivery/task orders.
- (8) Percentage of Performance Complete: This figure represents the percentage of all work completed for the **total contract value**.
- (9) Value of Completed Performance: This figure represents the total dollar value of the percentage of work completed in (8) above. This figure shall agree with the total shown on column 5 of the Contractor Performance Statement.
- (10) Less: Total of prior paid invoices: The total amount previously received by the A-E (**not** the amount previously invoiced).
- (11) Amount of This Invoice: The total dollar amount being requested under **this** Invoice.
- (12) Signature: **Original** signature of Company Official

(13) Name and Title: Typed Name and Title of Company Official

CONTRACTOR PERFORMANCE STATEMENT

LANTDIV NORVA 4-7300/21 (New 1-98)

CONTRACT # (1) N62470-98-C-0001

SHEET (2) 1 OF 1

PERIOD ENDING (3) 30 September 1997

TO BE COMPLETED BY CONTRACTOR

CONTRACT ACTION NUMBER	DESCRIPTION OF LINE ITEM SERVICES	TOTAL CONTRACT ACTION COST	% COMPL	VALUE OF COMPLETED PERFORMANCE	PRIOR REPORT	CURRENT REPORT
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Basic	Design	\$42,000.00	30%	\$12,600.00	\$10,112.00	\$2,488.00
AA(8)	Engineering:					
	Concept	\$5,000.00	100%	\$5,000.00	\$5,000.00	
	Site Investigation	\$2,200.00	100%	\$2,200.00	\$2,200.00	
	Conferences	\$2,700.00	30%	\$810.00	\$440	\$370.00
	Interior Design	\$1,500.00				
	Reproduction	\$922.00	10%	\$92.20	\$50.20	\$42.00
P00001	Design	\$5,400.00	10%	\$540.00	\$540.00	
AB	Engineering Services					
	Energy Study	\$1,370.00	100%	\$1,370.00	\$1,270.00	\$100.00
TOTALS		\$61,092.00	35%	\$22,612.20	\$19,612.20	\$3,000.00

REMARKS

CONTRACTOR PERFORMANCE STATEMENT

LANTDIV NORVA 4-7300/21 (New 1-98)

CONTRACT # (1) N62470-98-D-0001

SHEET (2) 1 OF 1

PERIOD ENDING (3) 30 September 1997

TO BE COMPLETED BY CONTRACTOR

CONTRACT ACTION NUMBER (1)	DESCRIPTION OF LINE ITEM SERVICES (2)	TOTAL CONTRACT ACTION COST (3)	% COMPL (4)	VALUE OF COMPLETED PERFORMANCE (5)	PRIOR REPORT (6)	CURRENT REPORT (7)
0001	Design	\$42,000.00	30%	\$12,600.00	\$10,112.00	\$2,488.00
AA ⁽⁸⁾	Engineering:					
	Concept	\$5,000.00	100%	\$5,000.00	\$5,000.00	
	Site Investigation	\$2,200.00	100%	\$2,200.00	\$2,200.00	
	Conferences	\$2,700.00	30%	\$810.00	\$440	\$370.00
	Interior Design	\$1,500.00				
	Reproduction	\$922.00	10%	\$92.20	\$50.20	\$42.00
0001-01	Design	\$29,800.00	10%	\$2,980.00	\$2,980.00	
AB	Engineering Services					
	Energy Study	\$3,200.00	100%	\$3,200.00	\$1,500.00	\$1,700.00
TOTALS		\$87,322.00	79%	\$26,882.20	\$22,282.20	\$4,600.00

REMARKS

INSTRUCTIONS FOR COMPLETING
CONTRACTOR PERFORMANCE STATEMENT
LANTDIV NORVA 4-7300/21 (NEW 1/98)
(Numbers in parenthesis correspond to the form)

Header Information

- (1) Contract Number: The contract number as shown on the A-E contract. Include delivery/task order number when invoicing for IDQ contracts. Include the contract (or delivery/task order) title and the location of work as shown in on the A-E contract (delivery/task order).
- (2) Sheet Number(s): Self explanatory.
- (3) Period Ending: Closing date of work for which the invoice is presented. The closing date must agree with the date on which the work was actually completed, i.e., the date on which submittals were actually delivered to NAVFAC Washington. In the case of engineering services contracts, supporting payroll data shall agree with this date.

Column Information

- (1) Contract Action Number: This number represents the actual contract action; i.e., Award, Modification, Contract Delivery/Task Order or Modification to Contract Delivery/Task Order as shown on the actual contractual document
- (2) Description of Line Item Services: The line items displayed in this column should correspond to the line items identified in the contract action(s). **The exact list of work items shall be approved by the PL prior to the first invoice submission.**

A separate Contractor Performance Statement shall further detail all the services required by the contract line item; e.g., engineering services shall be further broken down to identify field investigation, soil borings, survey/plotting, rendering, etc. (link required to second sample)

- (3) Total Contract Action Cost: The dollar amount of negotiated line item(s). The amount negotiated for the item in column 2, including overhead and profit.
- (4) Percentage Complete: The percentage of completed work including the work being invoiced:.
- (5) Value of Completed Performance: The total dollar amount of completed work including the work being invoiced:
- (6) Prior Report: The total dollar amount paid prior to this Invoice
- (7) Current Report: The total dollar amount being request under this invoice.

- (8) ACRN: The first two letters show on the line of accounting and appropriations found on the award documents (SF 252 – Block 9; SF 30 – Block 12; DD1155 – Block 17). If multiple lines of accounting are used, show all acrn's under the action.

Appendix V: CONTRACTOR'S RELEASE

CONTRACTOR'S RELEASE
NAVFAC 4330/7 (6-72)
S/N 0105-LF-001-9100

CONTRACTOR'S RELEASE UNDER CONTRACT

KNOW ALL MEN BY THESE PRESENTS: In consideration of the premise and the sum of

(\$ _____)
lawful money of the United States of America (hereinafter called the "Government")

(\$ _____)
of which has already been paid and

(\$ _____)
of which is to be paid by the Government under the above-mentioned contract, the undersigned Contractor does, and by the receipt of said sum shall, for itself, its successors and assigns, remise, release and forever discharge the Government, its officers, agents, and employees, of and from all liabilities, obligations and claims whatsoever in law and in equity under or arising out of said contract.

IN WITNESS WHEREOF, this release has been executed this _____ day of 19__.

WITNESSES: _____ (Contractor)

BY:

TITLE:

CERTIFICATE

I, _____, certify that I am the _____ secretary of the corporation named as Contractor, in the foregoing release; that _____ who signed said release on behalf of the Contractor was then _____ of said corporation; that said release was duly signed for and in behalf of said corporation by authority of its governing body and is within the scope of its corporate powers.

Appendix VI - NAVFAC PLANNING & DESIGN POLICY **STATEMENT - 94-01**

BARRIER-FREE DESIGN ACCESSIBILITY REQUIREMENTS

26 May 1994
(Revised 1 June 1997)

References:

- a. Architectural Barriers Act (Public Law 90-480) of 1968, as amended through 1984 (42 U.S.C. 4151-4157)
- b. Americans With Disabilities Act (ADA) (42 U.S.C. 12101) of 1990
- c. ADA/Title II Technical Assistance Manual of 24 January 1992
- d. Section 504 of the Rehabilitation Act (Public Law 93-112) of 1973, as amended through 1978 (29 U.S.C. 794a)
- e. Secretary of Defense Memorandum dated 20 October 1993

Purpose:

This Planning and Design Policy (PDP) Statement provides policy guidance for the accomplishment of barrier-free design in compliance with: (a) the Uniform Federal Accessibility Standards (UFAS), published as Federal Standard 795; and (b) Americans With Disabilities Act Accessibility Guidelines (ADAAG).

Background:

As a result of Reference (a), the UFAS (original 1984 edition and current 1988 edition) have been in effect for various Federal Government agencies, including the Navy. These standards apply to the design and construction of new facilities, as well as additions and/or alterations to existing facilities.

Reference (b) is a comprehensive effort to eliminate attitudinal discrimination and architectural and other barriers previously experienced by individuals with disabilities in employment, transportation and public accommodations. The ADAAG originally applied to state and local governments and private entities and not the Federal Government. Reference (c) highlights the major differences between UFAS and ADAAG.

Reference (d) prohibits discrimination on the basis of handicap in programs and activities conducted or assisted by the Federal Government. In effect, References (a) and (d) together establish for the Federal Government the same type of barrier-free requirements that are established by Reference (b) for state and local governments and private entities. The high probability that the ADAAG standards will be integrated into the UFAS makes design to these standards especially important so as to reduce further design changes.

By Reference (e), the Secretary of Defense directed that facilities previously subject to the UFAS meet the standards and guidelines of both the UFAS and the ADAAG, and that when they

differ, the one with the greatest accessibility requirement will govern.

With the passage of Reference (b) and the direction of Reference (e), there have been questions within the Navy regarding how and when to apply the ADAAG to Navy facilities. This PDP Statement seeks to clarify this and related policy issues.

Policy Statement:

It is the policy of the Naval Facilities Engineering Command (NAVFAC) to comply with Reference (e) and the standards and guidelines referenced therein - the UFAS and the ADAAG - to the extent that whichever one provides the greatest accessibility will govern. However, the UFAS contain exceptions for certain military facilities (paragraph 4.1.4), which continue to be applicable. Therefore, all buildings and facilities involving new construction, additions, or alterations, worldwide, which are open to the public or to limited segments of the public, or which may be visited by the public in the conduct of normal business, will be designed and constructed to be accessible to disabled individuals. All morale, welfare, and recreational facilities, including non-appropriated fund facilities; administrative facilities; educational facilities; manufacturing facilities; or any other facilities where civilian workers may be employed, will be accessible. Every building and facility should be designed to ensure access by disabled individuals unless the facility is specifically restricted to use only by able-bodied military personnel during the useful life of the building or facility. However, even in the instances where the military exclusion would apply, compliance with accessibility standards and guidelines is recommended, since the intended use of the facility may change with time.

Action and Procedures:

NAVFAC Headquarters, Engineering Field Divisions (EFDs), Engineering Field Activities (EFAs), Officers in Charge of Construction (OICCs), Navy Public Works Centers (PWCs), Navy Public Works Departments (PWDs), and any other Navy component with planning-, design- or construction-related responsibilities shall comply with the stated policy.

Waivers of Policy:

The granting of waivers of the policy herein stated must occur at the DOD level; as such waivers are not within the jurisdiction of the Naval Facilities Engineering Command. However, any waiver to be requested for a U. S. Navy facility must contain the endorsement of the Director of Design (Code 04, Code 07, etc.) at the Engineering Field Division (EFD) within whose geographical area the affected project is located, as well as the endorsement of the NAVFAC Headquarters Director, Planning and Engineering Support. Requests for endorsements of waiver requests submitted by EFDs are to be directed to the NAVFAC Headquarters Code 15C POC identified below and contain full justification in support of the waiver request consistent with the requirements of the waiver-granting organization, including the identification of alternatives investigated and considered and the potential impacts of not granting the waiver. Alternative solutions not requiring a waiver must be appropriately considered and evaluated within the EFD prior to submittal to Code 15C. When, in the opinion of the Code 15C POC, a waiver is justified and the only appropriate alternative, complete documentation will be forwarded to the Code 15D POC noted below for preparation of the endorsement to DOD required of the Director, Planning and Engineering Support.

Points of Contact:

NAVFAC Headquarters Code 15C POC for technical and detailed policy aspects of barrier-free planning and design is Dennis Talton, Code 15C, located in Norfolk, VA, DSN 262-4211 or COM (757) 322-4211. NAVFAC Headquarters Code 15D POC for general policy aspects of barrier-free planning and design is Terrel M. Emmons, Code 15D, located in Alexandria, VA, DSN 221-0033 or COM (703) 325-0033.